S/M No : TCM111S001

Service Manual
Color Television

CHSSIS	MODEL
CM-111S	DTH-21S7STF DTH-21S7STFB DTH-21S8STF DTH-21S8STFB
CN-111S	DTQ-21S7STF DTQ-21S7STFB DTQ-21S8STF DTQ-21S8STFB

Caution
: In this Manual, some parts can be changed for improving. their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center.

DAEWOO ELECTRONICS

May. 2008

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APPENDIX(Appendix is provide only by internet[http://svc.dwe.co.kr])

SAFETY PRECAUTIONS

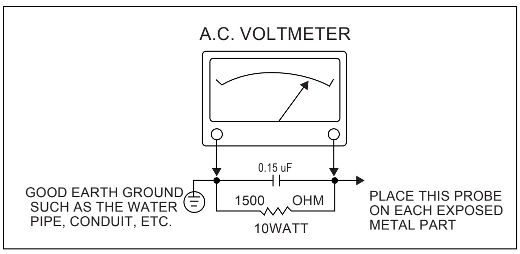
CAUTION : DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY. NEVER PERFORM CUSTOMIZED INSTALLATIONS WITHOUT MANUFACTURER'S APPROVAL. UNAUTHORIZED MODIFICATIONS WILL NOT ONLY VOID THE WARRANTY, BUT MAY LEAD TO YOUR BEING LIABLE FOR ANT RESULTING PROPERTY DAMAGE OR USER INJURY.
SERVICE WORK SHOULD BE PERFORMED ONLY AFTER YOU ARE THOROUGHLY FAMILIAR WITH ALL OF THE FOLLOWING SAFETY CHECKS AND SERVICING GUIDELINES. TO DO OTHERWISE, INCREASES THE RISK OF POTENTIAL HAZARDS AND INJURY TO THE USER.
WHILE SERVICING, USE AN ISOLATION TRANSFORMER FOR PROTECTION FROM A.C. LINE SHOCK.

SAFETY CHECKS

AFTER THE ORIGINAL SERVICE PROBLEM HAS BEEN CORRECTED, A CHECK SHOULD BE MADE OF THE FOLLOWING:

SUBJECT:FIRE & SHOCK HAZARD

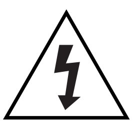
1. BE SURE THAT ALL COMPONENTS ARE POSITIONED IN SUCH A WAY AS TO AVOID POSSIBILITY OF ADJACENT COMPONENT SHORTS. THIS IS ESPECIALLY IMPORTANT ON THOSE MODULES WHICH ARE TRANSPORTED TO AND FROM THE REPAIR SHOP.
2. NEVER RELEASE A REPAIR UNLESS ALL PROTECTIVE DEVICES SUCH AS INSULATORS, BARRIERS, COVERS, SHIELDS, STRAIN RELIEFS, POWER SUPPLY CORDS, AND OTHER HARDWARE HAVE BEEN REINSTALLED PER ORIGINAL DESIGN. BE SURE, THAT THE SAFETY PURPOSE OF THE POLARIZED LINE PLUG HAS NOT BEEN DEFEATED.
3. SOLDERING MUST BE INSPECTED TO DISCOVER POSSIBLE COLD SOLDER JOINTS, SOLDER SPLASHES OF SHARP SOLDER POINTS. BE CERTAIN TO REMOVE ALL LOOSE FOREIGN PARTICLES.
4. CHECK FOR PHYSICAL EVIDENCE OF DAMAGE OR DETERIORATION TO PARTS AND COMPONENTS, FOR FRAYED LEADS, DAMAGED INSULATION (INCLUDING A.C. CORD), AND REPLACE IF NECESSARY. FOLLOW ORIGINAL LAYOUT, LEAD LENGTH AND DRESS.
5. NO LEAD OR COMPONENT SHOULD TOUCH A RECEIVING TUBE OR A RESISTOR RATED AT 1 WATT OR MORE. LEAD TENSION AROUND PROTRUDING METAL SURFACES MUST BE AVOIDED.
6. ALL CRITICAL COMPONENTS SUCH AS FUSES, FLAMEPROOF RESISTOR, CAPACITORS, ETC. MUST BE REPLACED WITH EXACT FACTORY TYPES. DO NOT USE REPLACEMENT COMPONENTS OTHER THAN THOSE SPECIFIED OR MAKE UNRECOMMENDED CIRCUIT MODIFICATIONS.
7. AFTER RE-ASSEMBLY OF THE STE ALWAYS PERFORM AN A.C. LEAKAGE TEST ON ALL EXPOSED METALLIC PARTS OF THE CABINET. (THE CHANNEL SELECTOR KNOB, ANTENNA TERMINALS, HANDLE AND SCREWS) TO BE SURE THE SET IS SAFE TO OPERATE WITHOUT DANGER OF ELECTRICAL SHOCK. DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST USE AN A.C. VOLTMETER, HAVING 5000 OHMS PER VOLT OR MORE SENSITIVITY, IN THE FOLLOWING MANNER : CONNECT A 1500 OHM 10 WATT RESISTOR, PARALLELED BY A .15 MFD. 150V A.C. TYPE CAPACITOR BETWEEN A KNOWN GOOD EARTH GROUND (WATER POPE, CONDUIT, ETC.) AND THE EXPOSED METALLIC PARTS, ONE AT A TIME. MEASURE THE A.C. VOLTAGE ACROSS THE COMBINATION OF 1500 OHM RESISTOR AND .15 MFD CAPACITOR. REVERSE THE A.C. PLUG AND REPEAT A.C. VOLTAGE MEASUREMENTS FOR EACH EXPOSED METALLIC PART. VOLTAGE MEASURED MUST NOT EXCEED .75 VOLTS R.M.S THIS CORRESPONDS TO 0.5 MILLIAMP A.C. NAY VALUE EXCEEDING THIS LIMIT CONSTITUTES A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED IMMEDIATELY.



SUBJECT : GRAPHIC SYMBOLS



THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRES-ENCE OF UNINSULATED "DANGEROUS VOLTAGE"
THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION ON SERVICE LITERATURE.

SUBJECT : X-RADIATION

1. BE SURE PROCEDURES AND INSTRUCTIONS TO ALL SERVICE PERSONNEL COVER THE SUBJECT OF X-RADIATION. THE ONLY POTENTIAL SOURCE OF X-RAYS IN CURRENT T.V. RECEIVERS IS THE PICTURE TUBE. HOWEVER, THIS TUBE DOES NOT EMIT X-RAYS WHEN THE HIGH VOLTAGE IS AT THE FACTORY SPECIFIED LEVEL. THE PROPER VALUE IS GIVEN IN THE APPLICABLE SCHEMATIC. OPERATION AT HIGHER VOLT-AGES MAY CAUSE A FAILURE OF THE PICTURE TUBE OR HIGH VOLTAGE SUPPLY AND UNDER CERTAIN CIRCUMSTANCES, AMY PRODUCE RADIA-TION IN EXCESS OF DESIRABLE LEVELS.
2. ONLY FACTORY SPECIFIED C.R.T ANODE CONNECTORS MUST BE USED.DEGAUSSING SHIELDS ALSO SERVE AS X-RAY SHIELD IN COLOR SETS. ALWAYS RE-INSTALL THEM.
3. IT IS ESSENTIAL THAT SERVICE PERSONNEL HAVE AVAILABLE AN ACCURATE AND RELIABLE HIGH VOLTAGE METER. THE CALIBRATION OF THE METER SHOULD BE CHECKED PERIODICALLY AGAINST A REFERENCE STANDARD. SUCH AS THE ONE AVAILABLE AT YOUR DISTRIBUTOR.
4. WHEN THE HIGH VOLTAGE CIRCUITRY IS OPERATING PROPERLY THERE IS NO POSSIBILITY OF AN X-RADIATION PROBLEM. EVERY TIME A COLOR CHASSIS IS SERVICED, THE BRIGHTNESS SHOULD BE RUN UP AND DOWN WHILE MONITORING THE HIGH VOLTAGE WITH A METER TO BE CERTAIN THAT THE HIGH VOLTAGE DOES NOT EXCEED THE SPECIFIED VALUE AND THAT IT IS REGULATING CORRECTLY. WE SUGGEST THAT YOU AND YOUR SERVICE ORGANIZATION REVIEW TEST PROCEDURES SO THAT VOLTAGE REGULATION IS ALWAYS CHECKED AS A STANDARD SERVICING PROCEDURE, AND THAT THE HIGH VOLTAGE READING BE RECORDED ON EACH CUSTOMER'S INVOICE.
5. WHEN TROUBLESHOOTING AND MAKING TEST MEASUREMENTS IN A PRODUCT WITH A PROBLEM OF EXCESSIVE HIGH VOLTAGE, AVOID BEING UNNECESSARILY CLOSE TO THE PICTURE TUBE AND THE HIGH VOLTAGE SUPPLY. DO NOT OPERATE THE PRODUCT LONGER THAN IS NECESSARY TO LOCATE THE CAUSE OF EXCESSIVE VOLTAGE.
6. REFER TO HV, B+ AND SHUTDOWN ADJUSTMENT PROCEDURES DESCRIBED IN THE APPROPRIATE SCHEMATIC AND DIAGRAMS (WHERE USED).

SUBJECT : IMPLOSION

1. ALL DIRECT VIEWED PICTURE TUBES ARE EQUIPPED WITH AN INTEGRA IMPLOSION PROTECTION SYSTEM. BUT CARE SHOULD BE TAKEN TO AVOID DAMAGE DURING INSTALLATION. AVOID SCRATCHING THE TUBE. OF SCRATCHED REPLACE IT.
2. USE ONLY RECOMMENDED FACTORY REPLACEMENT TUBES.

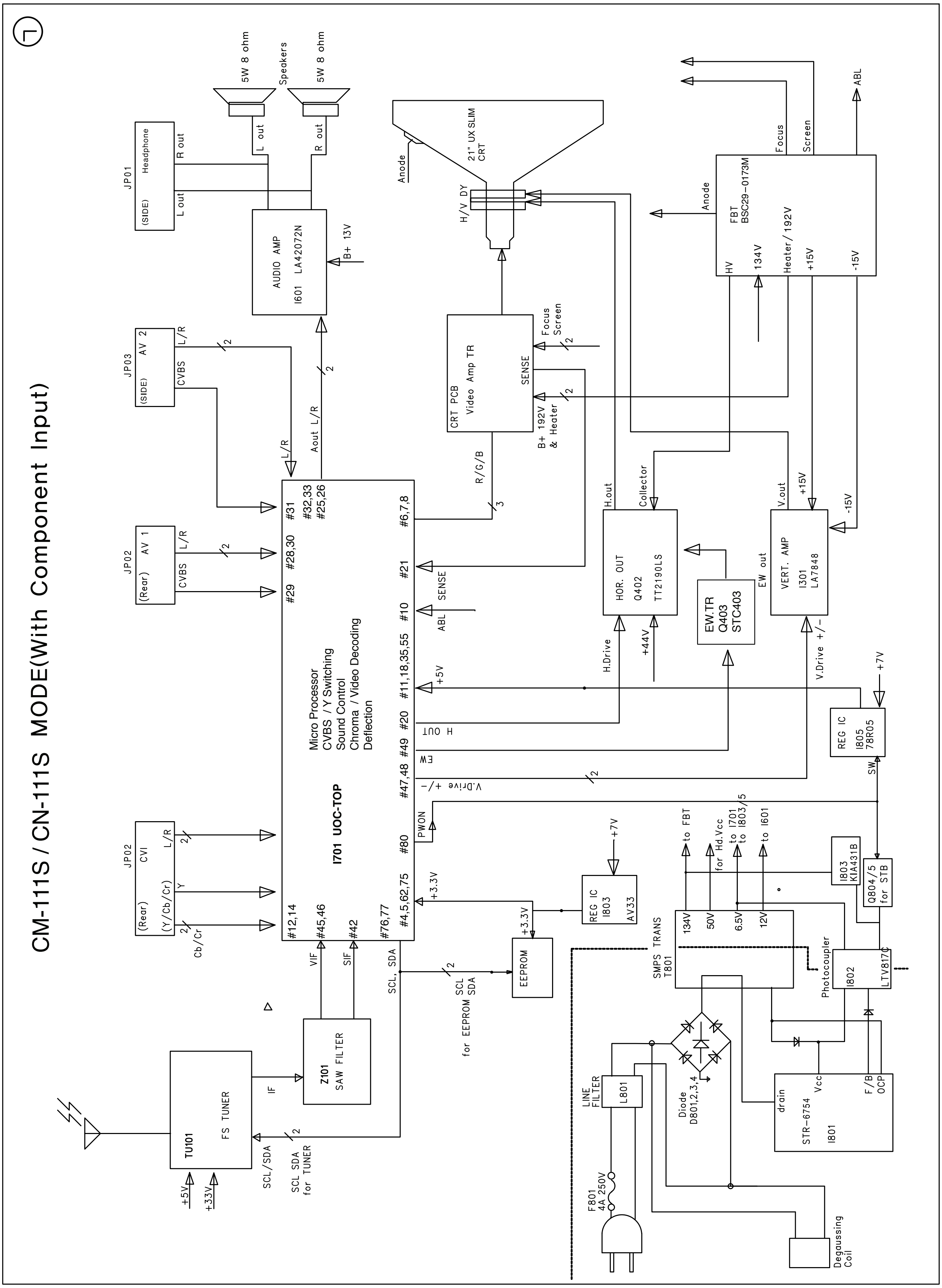
SUBJECT : TIPS ON PROPER INSTALLATION

1. NEVER INSTALL ANY PRODUCT IN A CLOSED-IN RECESS, CUBBYHOLE OR CLOSELY FITTING SHELF SPACE, OVER OR CLOSE TO HEAT DUCT, OR IN THE PATH OF HEATED AIR FLOW.
2. AVOID CONDITIONS OF HIGH HUMIDITY SUCH AS: OUTDOOR PATIO INSTALLATIONS WHERE DEW IS A FACTOR, NEAR STEAM RADIATORS WHERE STEAM LEAKAGE IS A FACTOR, ETC.
3. AVOID PLACEMENT WHERE DRAPERIES MAY OBSTRUCT REAR VENTING. THE CUSTOMER SHOULD ALSO AVOID THE USE OF DECORATIVE SCARVES OR OTHER COVERINGS WHICH MIGHT OBSTRUCT VENTILATION.
4. WALL AND SHELF MOUNTED INSTALLATIONS USING A COMMERCIAL MOUNTING KIT, MUST FOLLOW THE FACTORY APPROVED MOUNTING INSTRUCTIONS. A PRODUCT MOUNTED TO A SHELF OR PLATFORM MUST RETAIN ITS ORIGINAL FEET (OR THE EQUIVALENT THICKNESS IN SPACERS)TO PROVIDE ADEQUATE AIR FLOW ACROSS THE BOTTOM, BOLTS OR SCREWS USED FOR FASTENERS MUST NOT TOUCH ANY PARTS OR WIRING. PERFORM LEAKAGE TEST ON CUSTOMIZED INSTALLATIONS.
5. CAUTION CUSTOMERS AGAINST THE MOUNTING OF A PRODUCT ON SLOPING SHELF OR A TILTED POSITION, UNLESS THE PRODUCT IS PROPERLY SECURED.
6. A PRODUCT ON A ROLL-ABOUT CART SHOULD BE STABLE ON ITS MOUNTING TO THE CART. CAUTION THE CUSTOMER ON THE HAZARDS OF TRYING TO ROLL A CART WITH SMALL CASTERS ACROSS THRESHOLDS OR DEEP PILE CARPETS.
7. CAUTION CUSTOMERS AGAINST THE USE OF A CART OR STAND WHICH HAS NOT BEEN LISTED BY UNDERWRITERS LABORATORIES. INC. FOR USE WITH THEIR SPECIFIC MODEL OF TELEVISION RECEIVER OR GENERICALLY APPROVED FOR USE WITH T.V.S OF THE SAME OR LARGER SCREEN SIZE.
8. CAUTION CUSTOMERS AGAINST THE USE OF EXTENSION CORDS, EXPLAIN THAT A FOREST OF EXTENSIONS SPROUTING FROM A SINGLE OUTLET CAN LEAD TO DISASTROUS CONSEQUENCES TO HOME AND FAMILY.

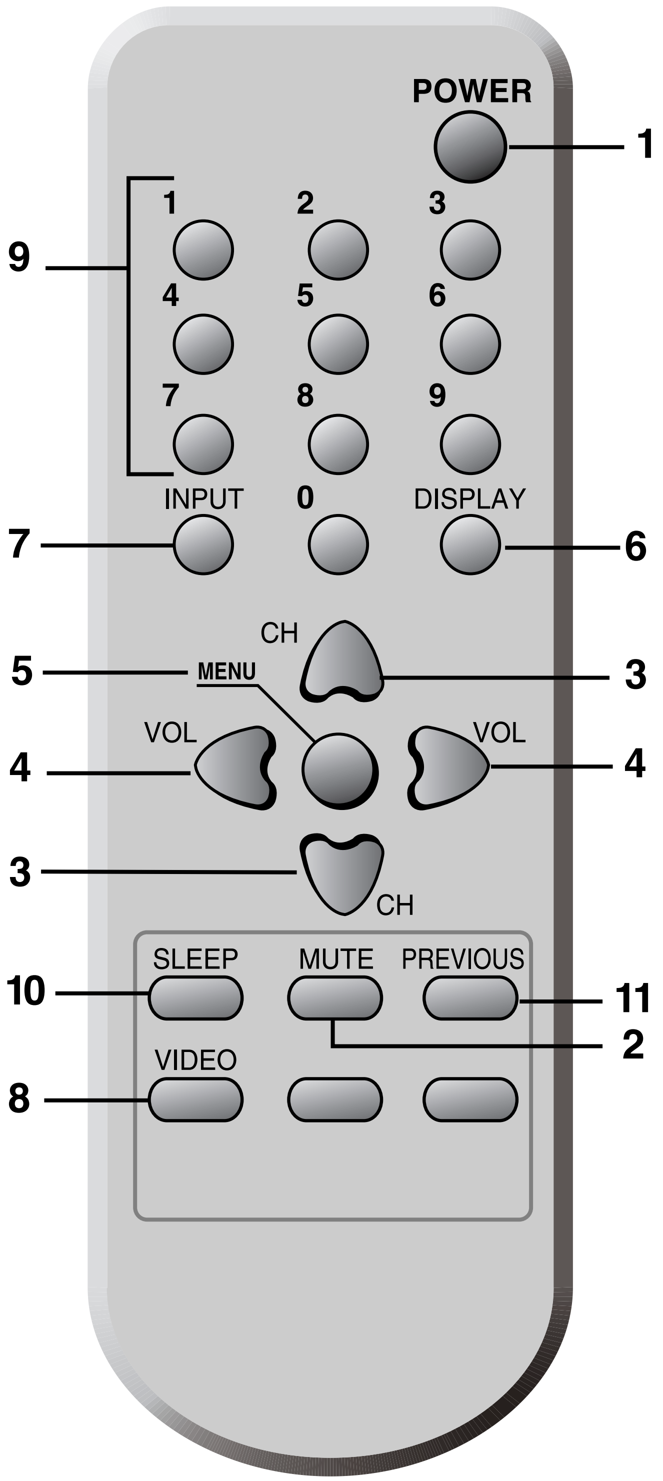
SPECIFICTION

Model / Item	DTH-21S7STF / 21S7STFB / 21S8STF / 21S8STFB DTQ-21S7STF / 21S7STFB / 21S8STF / 21S8STFB
CHASSIS	CM-111S
TV Standard	NTSC-M(CN-111S), NTSC-M / PAL-M / PAL-N(CM-111S)
Power Input	AC 110V ~ 220V, 50/60 Hz
Power Consumption	85W
Tuning System	Frequency Synthesizer(FS) Tuning System
Tuning Ranges	TV VHF(L) : CH2 - CH6 UHF(H) : CH7 - CH13 UHF : CH14 - CH69 CATV VHF(L) : 5A, A,B,A-5-A-1,CH2-CH6 VHF(H) : C-W+11,CH7 - CH13 UHF : W+12-W+84"
Sound Output	5W + 5W
Speaker	8 ohm 5W x 2EA
Antenna Input Impedance	75 ohm Unbalanced
Auxiliary Input Terminal	Side: Video, Audio(L,R) - AV2, Headphone Rear : Video, Audio(L,R) - AV1 Y, Cb, Cr, Audio(L,R) - CVI
Intermediate Frequencies	Picture IF Carrier Frequency : 45.75MHz Sound IF Carrier Frequency : 41.25MHz Color Sub-Carrier Frequency : NTSC-M : 3.579545 Mhz PAL-N : 3.582056 Mhz PAL-M : 3.575611 Mhz
Remote Control	R-48C04(AAA)
Special Function	1) Closed Caption 2) Channel Label

CIRCUIT BLOCK DIAGRAM



Your Remote Control(R-48C04)



1. POWER
Use this button to turn your TV on or off.

2. MUTE
Use to turn the TV’s sound on and off.

3. ▼CH▲
Use these buttons to change channels on your TV, or select items in the menu system.

4. ◀VOL▶
Use these buttons to change your TV's volume, to activate selections in the menu system, or to change audio and video settings.

5. MENU
Use this button to turn the TV’s menu system on and off.

6. DISPLAY
Use this button to display the present status.

7. INPUT
Use this button to select the TV’s signal source.

8. VIDEO
Use this button to display video adjustment items.

9. 0-9
Use these buttons to change channels.

10. SLEEP
Use this button to program the TV to turn off after a certain time.

11. PREVIOUS
Use this button to return to the previous channel you were watching.

ALIGNMENT INSTRUCTION

1. SERVICE MODE ADJUSTMENTS

Follow the steps below whenever service adjustment is required.
See Table- A and Table- B to determine if service adjustments are required.

1) How to enter the service mode using the user remote control.
- Turn the set on.
- Direct the remote control to the reception window of TV.
- Push buttons of remote control in sequence as follows.
1 → MUTE → DISPLAY → MUTE
- Then, the screen will appear as follows.

```
SERVICE 72
SERVICE 02
SERVICE 03
SERVICE 04
SERVICE 05
SERVICE 06
SERVICE 07
SERVICE 08
SERVICE 09
SERVICE 10
SERVICE 11
SERVICE 12

▲ ▼ SELECT ◀ ▶ ADJUST ■ EXIT
```

- Using the channel up or channel down button, select the item you wish to adjust. (The color of selected item turns into the blue.)
- Press the volume up or down button to enter in the service mode you wish to adjust.

2) How to memorize the adjusted values in the service mode.
- Don't have to press any button the state which the screen is displaying each of service menus after all adjustments are completed each of all service menu.

Table-A : Adjust the values of service mode when a part is replaced.

PART REPLACED	ADJUSTMENT		NOTES
	NECESSARY	UNNECESSARY	
IC701 (U-COM)		O	Data is stored in I702.
I702 (EEPROM)	O		Initial setting values are written from IC701. ADJUSTING ITEMS S6 : Geometry adjustmrnt S8 : White balance S9 : Subbrightness
CRT	O		Adjust items related to picture tube only. (White Balance adjustment) CRT OPTION (Screen Option adjustment)

Table-B : CM/N-111S(DTH/Q-21S7STF) EEPROM DATA

MODE	NAME	CM/N-111S	REMARK
S1	HEAT RUN	ON → OFF	
S2	SCREEN ADJUST	650V (6AE:EA)	
S5	ACC AUTO	Off	
	ACC LEVEL	24	
	IF OFF	37	
	QSS	1	
	DSG	1	
	Fine Tunning		
	ISP-Mode	Off	
S6	V-SLOPE	34	
	V.CENTER	34	
	V.SIZE	25	
	H.CENTER	45	
	H.SIZE	57	
	V.LINEARITY	27	
	S_CORRECTION	25	
	H.PARALLEL	25	
	H-BOW	29	
	PARABOLA	44	
	EW TRAPEZ	38	
	CORNER TOP	47	
	CONET BOTTOM	46	
	50Hz.HC	+9	
	50Hz.HS	+1	
	50Hz.VC	+7	
	50Hz.VS	0	
	HBL	1	
	WBF	5	
	WBR	10	
S7-1	CFCLF	0	
	YD TV	7	
	DTR	0	
	BPYD	1	
	TC12X	0	
	PF	3	
	TRF	1	
	NRR	0	
	WS	3	
	BLS	0	
	DSK	0	
	AAS	0	
	BSD	0	
	BKS	1	
	DSA	1	
	RPO	2	
	RPA	2	

MODE	NAME	CM/N-111S	REMARK
S7-2	SOC	3	
	PWLDAC	3	
	CL	10	
	GAM	0	
	ACL	0	
	BPS	0	
	CHSE	0	
	CBPS	0	
	CB	0	
S8	R-GAIN	32	
	G-GAIN	32	
	B-GAIN	45	
	R-BIAS	32	
	G-BIAS	32	
	B-BIAS	32	
	SCR R-BIAS	0	
	SCR G-BIAS	0	
	SCR B-BIAS	0	
	CVI R-BIAS	-6	
	CVI G-BIAS	8	
	CVI B-BIAS	10	
	DP-Brightness	17	
	DP-Contrst	17	
	DP-Color	5	
	DP-Sharpnes	17	
	OPTION 1	1111 0001	
	OPTION 2	0110 0011	
	OPTION 3	0000 0011	
	FACTORY SET		

MODE	NAME	DATA
	AIR / CABLE	AIR
	VOLUME	CENTER (32)
	MEMORY CH	AIR : 3,4,5,7,8,10,11,13,32,48
		CATV : 36,96
	Language	English
	Power Restore	ON
	Close Caption	C1
	Blue Back	OFF

MODE	NAME	Address	DATA
	SCREEN Bright	BAE	LG-DA
	AGC_S	SF5 ~ SF8	19 (hex)
	AGC_Stop	SF2	26 (hex)
	Bright	668	12 (hex)
	Color	66A	16 (hex)
	Sharpness	66B	27 (hex)
	Tint	66C	1F (hex)

2. ASSEMBLY ADJUSTMENTS

1) SCREEN ADJUSTMENT (S2)

- Enter the service mode and select service adjustment S2.
- You can see the one horizontal line on the screen.
- Adjust the Screen Control Volume (located on FBT) so that the horizontal line onscreen may be disappeared.
- Press S2 button to exit in the screen adjustment mode.

2) FOCUS ADJUSTMENT

- Turn in a local station and adjust the Focus Control knob (located on FBT) for best picture details at high light condition.

3) AGC ADJUSTMENT

- Adjust the antenna signal level at 60 dBuV
- Tune a colour bar pattern.
- Find the "AGC" item in service mode.
  (it's two way to entering the "AGC" item in service mode)
  - Enter the service mode and select service adjustment S5 and select AUTO-AGC.
  - Enter the service mode and select service adjustment S3.
- Wait until AGC level stabilise to the optimum value.

- Alternatively,
  Enter the service mode and select service adjustment S5 and select AGC LEVEL.
  Use "Vol Up/Dwn" keys to adjust manually to the desired Tuner Take Over Point.

4) GEOMETRIC ADJUSTMENTS (S6)

- Select service adjustment S6
- You can see the OSD as shown in below.

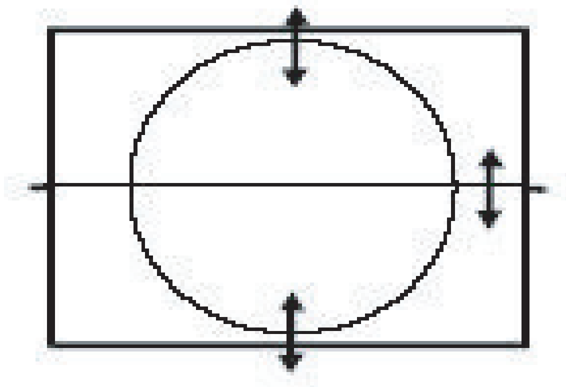
V,SLIPE	37	EW TR	40
V,CENTER	38	COR, TOP	51
V,SIZE	26	COR, BOT	48
H,CENTER	35	50Hz_HC	+5
H,SIZE	62	50Hz_HS	+1
V,LIN	24	50Hz_VC	0
S,CORR	27	50Hz_VS	0
H,PARA	29	HBL	01
H,BOW	35	WBF	05
PARA	34	WBR	10

▲ ▼ SELECT ◀ ▶ ADJUST ■ EXIT

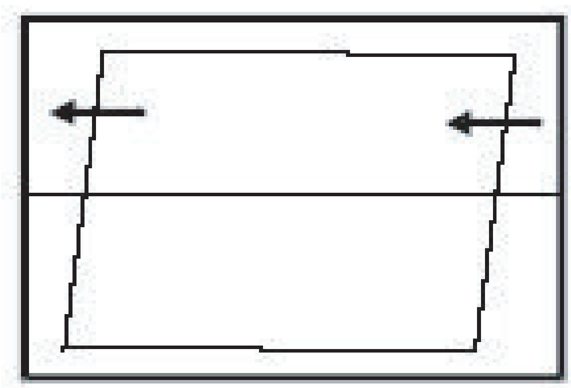
4-2) Vertical Position Adjustment.
- Select V.SLOPE item, adjust V.SLOPE data value till the horizontal line in the centre of the video signal is just at the position where the blanking stars.
- Select V.CENTER item, adjust V.CENTER data value to center the raster properly on the screen.

4-3) Vertical Size Adjustment
- Select V.SIZE item, adjust V.SIZE data value to proper vertical size as follows.

4-4) Horizontal Position Adjustment
- Select H.CENTER item, adjust H.CENTER data value to obtain proper horizontal centering of the internal cross pattern at the left and right of the screen.



4-5). H.BOW, PARABOLA Adjustment
- Adjust the H.BOW, PARABOLA to compensate for geometrical distortion.
- You can not adjust the H.PARALLEL, H.SIZE, EW TRAPEZ, CORNER TOP and CORNER BOTTOM.



H.PARALLEL

4-6) 50Hz_Horizontal & Vertical Size, Center Adjusstment
- Adjust PAL M System’s Picture Geometric whth This Mode.
  After Adjusting, you must turn off to save the setting values.

5) WHITE BALANCE ADJUSTMENT(S8)
- Receive a good local channel.
- Enter the service mode and select service adjustment S8.
- You can see the OSD as shown in below.

R-GAIN	32	SRC R-BIAS	32
G-GAIN	32	SRC G-BIAS	32
B-GAIN	40	SRC B-BIAS	00
R-BIAS	32	CVI R-BIAS	-8
G-BIAS	32	CVI G-BIAS	10
B-BIAS	32	CVI B-BIAS	+10

▲▼ SELECT ◀▶ ADJUST ■ EXIT

- Using volume up or volume down, adjust service adjustment data of R-GAIN/G-GAIN/B-GAIN and R-BIAS/G-BIAS until a good gray scale with normal whites is obtained.ALIGNMENT INSTRUCTIONS

6) DIGITAL PRESET(D.P) ADJUSTMENTS(S9)
SUBBRIGHTNESS ADJUSTMENT
- Receive a good local channel.
- Enter the service mode and select service adjustment S9.
- You can see the OSD as shown in below.

DP-Brightness	05
DP-Contrast	17
DP-Color	5
DP-Sharpness	17

▲▼ SELECT ◀▶ ADJUST ■ EXIT

- Select DP-Brightness item, adjust DP-Brightness data value to obtain normal brightness level.

DP-Contrast
- Fixed value = 17

DP-Color
- Fixed value = 5

DP-Sharpness
- Fixed value = 17

7) FACTORY OUTGOING MODE (S12 : FACT)
- If you select the S12, then the set becomes factory outgoing status.
- You can see the OSD "SHIPPING OFF"

1. UOC-TOP-80

Versatile signal processor for CRT TV applications

General description

The UOC-TOP-80 series is a very flexible concept which offers attractive solutions for 1fH TV receivers with CRTs. This new concept offers a complete range of products with the right price level to cover TV receivers from basic mono 14 inch sets up to the best featured large and/or wide screen stereo TV sets. The UOC-TOP-80 concept can also be used as front-end for 2fH and LCD TV receivers.

The UOC-TOP-80 concept is mounted in a QFP80 package and is split up in the following ranges:

. Stereo concept. It contains a video processor with many features (more details are given in the feature list in Section 2) and a micro controller with extensive OSD possibilities (UOCTOP_10PTXTST version). Optional functions are a Teletext- / Closed Caption decoder, a digital stereo decoder, an audio DSP. The block diagram is given in Figure 2

. AV-110 (AV-stereo) concept. The features of the analog video processor are comparable with those of the Stereo concept, but it has an analog audio control circuit with balance, treble, bass and loudness control. Two different micro processor are available for this concept, one with OSD and Closed Captioning or Teletext and Closed Captioning features (UOCTOP_1PTXT version), the other with (extended) OSD features (UOCTOP_OSD version). The block diagram is given in Figure 1.

. AV-90 concept. This concept is nearly identical to the AV-110 concept. The only difference that it does not contain an East-West and Scan Velocity Modulation (SVM) output. This concept is intended for 90° picture tubes.

. Mono-110 concept. The functional content of this concept is comparable with that of the AV stereo concept, however, it has just a stereo input switch and no audio tone control circuit. The block diagram is given in Figure 1.

. Mono-90 concept. This concept is intended for 90° picture tubes. The circuit has an audio switch for mono signals but the mono inputs can also be used as a stereo input. In this range most of the video and audio processing features have been omitted. Also this concept can be supplied with one of the two micro processors (UOCTOP_1PTXT or UOCTOP_OSD version). The block diagram is given in Figure 3.

The most important features of the complete IC series are given in the following feature lists.

All packages are according to the ROHS legislation, which also means that these packages are lead-free. The ICs have supply voltages of 8V (only AV and Mono versions), 5V and 3.3V. For the Stereo concept an 1.8V supply is needed, but this can be simply derived by adding an emitter follower at a reference voltage from the device. UOC-TOP-80 is supported by a comprehensive Global TV Software Development kit to enable easy programming and fast time-to-market (see also Section 21.4 “Licenses”).

IC DESCRIPTION

Quick reference data

Table 1. Quick reference data

SYMBOL	PARAMETER	MIN.	TYP.	MAX.	UNIT
Supply					
V_P	analogue supply voltage VSP	4.7	5.0	5.3	V
I_P	supply current (5.0 V)	–	150	–	mA
V_{DDA}	digital supply VSP / analogue supply periphery	3.0	3.3	3.6	V
I_{DDA}	supply current (3.3 V); Stereo and Mono90 versions	–	50	–	mA
I_{DDA}	supply current (3.3 V); AV110/90 and Mono110 versions	–	70	–	mA
$V_{DDC/P}$	digital supply to core/periphery; Stereo version	1.7	1.8	1.9	V
$I_{DDC/P}$	supply current (1.8 V); Stereo version	–	170	–	mA
V_{PAudio} [1]	audio supply voltage	4.7	8.0	8.4	V
I_{PAudio} [1]	supply current (5.0/8.0 V); mono90 version	–	1	–	mA
I_{PAudio}	supply current (8.0 V); AV110/90 and mono110 version	–	9	–	mA
P_{tot}	total power dissipation (stereo version)	–	–	1.4	W
P_{tot}	total power dissipation (other versions)	–	–	1.1	W
Input voltages					
$V_{iVIFrms)}$	video IF amplifier sensitivity (RMS value)	–	75	150	µV
$V_{iSIF(rms)}$	QSS sound IF amplifier sensitivity (RMS value) (Stereo version only)	–	45	–	dBµV
$V_{iSSIF(rms)}$	sound IF amplifier sensitivity (RMS value)	–	1.0	–	mV
$V_{iAUDIO(rms)}$	external audio input (RMS value)	–	1.0	1.3	V
$V_{iCVBS(p-p)}$	external CVBS/Y input (peak-to-peak value)	–	1.0	1.4	V
$V_{iCHROMA(p-p)}$	external chroma input voltage (burst amplitude) (peak-to-peak value)	–	0.3	1.0	V
$V_{iRGB(p-p)}$	RGB inputs (peak-to-peak value)	–	0.7	0.8	V
$V_{iY(p-p)}$	luminance input signal (peak-to-peak value)	–	1.0	–	V
$V_{iPB(p-p)}$	P_B input signal (peak-to-peak value)[2]	–	0.7	–	V
$V_{iPR(p-p)}$	P_R input signal (peak-to-peak value)[2]	–	0.7	–	V
Output signals					
$V_{o(IFVO)(p-p)}$	demodulated CVBS output (peak-to-peak value)	–	2.0	–	V
$V_{o(QSSO)(rms)}$	sound IF intercarrier output (RMS value)	–	100	–	mV
$V_{o(AMOUT)(rms)}$	demodulated AM sound output (RMS value)	–	250	–	mV
$V_{o(AUDIO)(rms)}$ [1]	non-controlled audio output signals (RMS value)	1.0	–	–	V
$V_{o(CVBSO)(p-p)}$	selected CVBS output (peak-to-peak value)	–	2.0	–	V
$I_{o(AGCOUT)}$	tuner AGC output current range	0	–	1	mA
$V_{oRGB(p-p)}$	RGB output signal amplitudes (peak-to-peak value)	–	1.2	–	V
I_{oHOUT}	horizontal output current	10	–	–	mA
I_{oVERT}	vertical output current (peak-to-peak value)	–	1	–	mA
I_{oEWD}	EW drive output current	–	–	1.2	mA

[1] The supply voltage for the analogue audio part of the mono-90 version can be 5V or 8V. For a supply voltage of 5V the maximum signal amplitudes at in and outputs are $1V_{rms}$. For a supply voltage of 8V the maximum output signal amplitude is 2 V_{rms}. The AV-110/90 and Mono-110 versions need a supply voltage of 8 V and the Stereo version a supply voltage of 5 V.

[2] The YP_BP_R input signal amplitudes are based on a color bar signal with 100% saturation.

Block Diagram

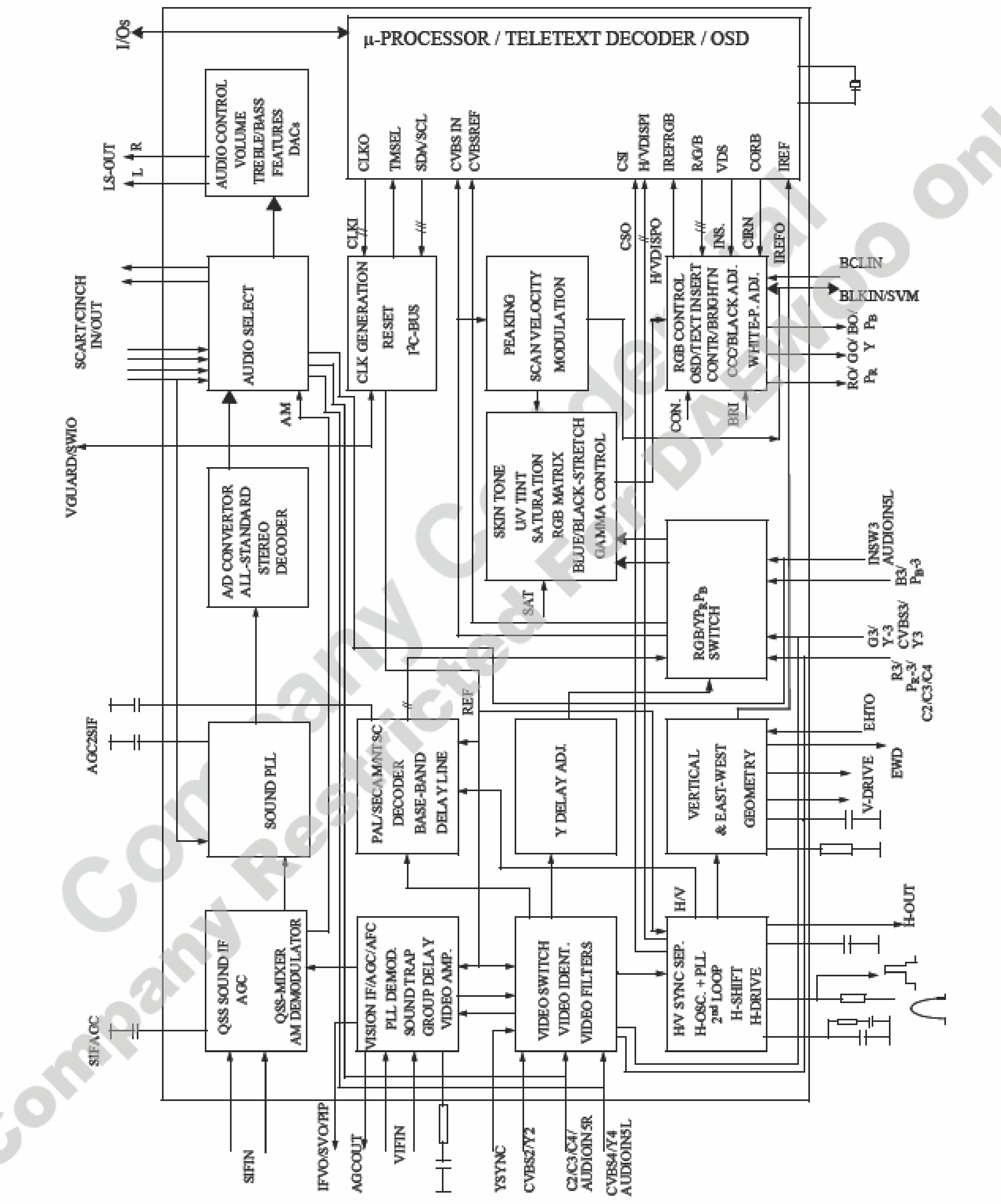


Fig 2. Block diagram of the "STEREO" TV processor

IC DESCRIPTION

Pinning information

Table 8. Pinning information

SYMBOL	QFP80 H1				QFP80 H				DESCRIPTION
	Stereo	AV-110 Mono-110	AV-90	Mono-90	Stereo	AV-110 Mono-110	AV-90	Mono-90	
INT0/P0.5	79	1	1	1	66	64	64	64	external interrupt 0 or port 0.5 (4 mA current sinking capability for direct drive of LEDs)
VDDC(3.3V)	–	2	2	2	–	63	63	63	supply
VREFAD	2	–	–	–	63	–	–	–	reference voltage for audio ADCs (3.3/2 V)
GND5	3	3	3	3	62	62	62	62	ground
VDDA2(3.3V)	4	–	–	–	61	–	–	–	supply
VPE	–	4	4	4	–	61	61	61	OTP Programming Voltage
VDDA1(3.3V)	5	5	5	5	60	60	60	60	supply voltage
BO/PBOUT	6	6	6	–	59	59	59	–	Blue output / P_B output
BO	–	–	–	6	–	–	–	59	Blue output
GO/YOUT	7	7	7	–	58	58	58	–	Green output / Y output
GO	–	–	–	7	–	–	–	58	Green output
RO/PROUT	8	8	8	–	57	57	57	–	Red output / P_R output
RO	–	–	–	8	–	–	–	57	Red output
BLKIN/SVM [1]	9	9	–	–	56	56	–	–	black current input / scan velocity modulation output
BLKIN	–	–	9	9	–	–	56	56	black current input
BCLIN	10	10	10	10	55	55	55	55	beam current limiter input
VP4	11	11	11	11	54	54	54	54	supply for TV processor
B3/P_B3	12	12	12	12	53	53	53	53	3rd B input / P_B input
G3/Y3/CVBS3/Y3 [1]	13	13	13	13	52	52	52	52	3rd G input / Y input / CVBS input / Y input
R3/P_R3/C2/C3/C4 [1]	14	14	14	14	51	51	51	51	3rd R input / P_R input / C2/3/4 input
INSSW3/AUDIOIN5L [1]	15	15	15	–	50	50	50	–	3rd RGB / YP_BP_R insertion input / audio 5 left input
INSSW3	–	–	–	15	–	–	–	50	3rd RGB / YP_BP_R insertion input /
YOUT	16	16	16	16	49	49	49	49	Y-output (for YUV interface)
YSYNC	17	17	17	17	48	48	48	48	Y-input for sync separator
VP3	18	18	18	18	47	47	47	47	supply voltage (5 V)
GND3	19	19	19	19	46	46	46	46	ground connection
HOUT	20	20	20	20	45	45	45	45	horizontal output
FBISO/SANDCA	21	21	21	21	44	44	44	44	flyback input/sandcastle output
EHTO	22	22	22	22	43	43	43	43	EHT/overvoltage protection input
AUDOUTSR	23	23	23	–	42	42	42	–	audio output for SCART/CINCH (right signal)
NC	–	–	–	23	–	–	–	42	not connected
AUDOUTSL	24	24	24	–	41	41	41	–	audio output for SCART/CINCH (left signal)
AUDOUTSC	–	–	–	24	–	–	–	41	audio output for SCART/CINCH
AUDOUTLSR	25	–	–	–	40	–	–	–	audio output for audio power amplifier (right signal)
AUDOUTSM2/LSR	–	25	25	25	–	40	40	40	audio output for audio power amplifier (right signal) or fixed audio output for mono applications
AUDOUTLSL	26	–	–	–	39	–	–	–	audio output for audio power amplifier (left signal)
AUDOUTLSM1/LSL	–	26	26	26	–	39	39	39	audio output for audio power amplifier (left signal) or speaker output for mono applications
C2/C3/C4/AUDIOIN5R [1]	27	27	27	–	38	38	38	–	chroma-2/3/4 input / audio 5 right input
C2/C3/C4	–	–	–	27	–	–	–	38	chroma-2/3/4 input
AUDIOIN2R	28	–	–	–	37	–	–	–	right stereo 2 input
AUDIOIN3/IN1R [2]	–	28	28	28	–	37	37	37	audio 3 input / right stereo input
CVBS2/Y2	29	29	29	29	36	36	36	36	CVBS2/Y2 input
AUDIOIN2L/SSIF	30	–	–	–	35	–	–	–	left stereo input / sound IF input
AUDIOIN2/IN1L/SSIF [2] [3]	–	30	30	30	–	35	35	35	audio 2 input / left stereo input / sound IF input
CVBS4/Y4/AUDIOIN5L [1]	31	31	31	–	34	34	34	–	CVBS4/Y4 input audio 5 left input
CVBS4/Y4	–	–	–	31	–	–	–	34	CVBS4/Y4 input
AUDIOIN4R	32	32	32	–	33	33	33	–	audio-4 input (right signal)
NC	–	–	–	32	–	–	–	33	not connected
AUDIOIN4L	33	33	33	–	32	32	32	–	audio-4 input (left signal)
NC	–	–	–	33	–	–	–	32	not connected
IFVO/SVO/PIP [4]	34	34	34	–	31	31	31	–	IF video output / selected CVBS output / PIP output
IFVO/SVO [4]	–	–	–	34	–	–	–	31	IF video output / selected CVBS output
VP2	35	35	35	35	30	30	30	30	2nd supply voltage TV processor (+5 V)
AGC2SIF	36	–	–	–	29	–	–	–	Sound IF AGC capacitor
VCC8V	–	36	36	36	–	29	29	29	8 Volt supply for audio switches
PLLIF	37	37	37	37	28	28	28	28	IF-PLL loop filter
GND2	38	38	38	38	27	27	27	27	ground 2 for TV processor
SIFAGC	39	–	–	–	26	–	–	–	Sound IF AGC capacitor
DECSDEM	–	39	39	39	–	26	26	26	decoupling sound demodulator
AGCOUT	40	40	40	40	25	25	25	25	tuner AGC output
SIFIN2	41	–	–	–	24	–	–	–	2nd sound IF input

SYMBOL	QFP80 H1				QFP80 H				DESCRIPTION
	Stereo	AV-110 Mono-110	AV-90	Mono-90	Stereo	AV-110 Mono-110	AV-90	Mono-90	
AVL/SSIFOUT/ SNDDEMOUT[5]	–	41	41	41	–	24	24	24	AVL / Second sound IF output / Sound demodulator output
SIFIN1	42	–	–	–	23	–	–	–	1st sound IF input
NC	–	42	42	42	–	23	23	23	not connected
IREF	43	43	43	43	22	22	22	22	reference current input
VSC	44	44	44	44	21	21	21	21	vertical sawtooth capacitor
VIFIN2	45	45	45	45	20	20	20	20	IF input 2
VIFIN1	46	46	46	46	19	19	19	19	IF input 1
VDRA	47	47	47	47	18	18	18	18	vertical drive A output
VDRB	48	48	48	48	17	17	17	17	vertical drive B output
EWD	49	–	–	–	16	–	–	–	East-West drive output
EWD/AVL	–	49	–	–	–	16	–	–	East-West drive output or AVL capacitor
AVL	–	–	49	49	–	–	16	16	AVL capacitor
DECBG	50	50	50	50	15	15	15	15	bandgap decoupling
SECPLL	51	51	51	51	14	14	14	14	SECAM PLL decoupling
GND1	52	52	52	52	13	13	13	13	ground 1 for TV-processor
PH1LF	53	53	53	53	12	12	12	12	phase-1 filter
PH2LF	54	54	54	54	11	11	11	11	phase-2 filter
VP1	55	55	55	55	10	10	10	10	1st supply voltage TV-processor (+5 V)
DECDIG	56	56	56	56	9	9	9	9	decoupling digital supply
VGUARD/SWIO [6]	57	57	57	–	8	8	8	–	V-guard input / I/O switch (e.g. 4 mA current sinking capability for direct drive of LEDs)
VGUARD	–	–	–	57	–	–	–	8	V-guard input
DECDIGNEG	58	58	58	58	7	7	7	7	supply
XTALOUT	59	59	59	59	6	6	6	6	crystal oscillator output
XTALIN	60	60	60	60	5	5	5	5	crystal oscillator input
SNDNEG	61	–	–	–	4	–	–	–	supply
IC	–	61	61	61	–	4	4	4	internally connected to ground
VDDA3(3.3V)	62	–	–	–	3	–	–	–	supply
P1.5	–	62	62	62	–	3	3	3	port 1.5
P1.2	63	63	63	63	2	2	2	2	port 1.2
P2.5/PWM4	64	64	64	64	1	1	1	1	port 2.5 or PWM4 output
P2.4/PWM3	65	65	65	65	80	80	80	80	port 2.4 or PWM3 output
P3.3/ADC3	66	66	66	66	79	79	79	79	port 3.3 or ADC3 input
P3.2/ADC2	67	67	67	67	78	78	78	78	port 3.2 or ADC2 input
VDDC(1.8V)	68	–	–	–	77	–	–	–	supply
NC	–	68	68	68	–	77	77	77	not connected
P3.1/ADC1	69	69	69	69	76	76	76	76	port 3.1 or ADC1 input
P3.0/ADC0	70	70	70	70	75	75	75	75	port 3.0 or ADC0 input
P2.3/PWM2	71	71	71	71	74	74	74	74	port 2.3 or PWM2 output
P2.2/PWM1	72	72	72	72	73	73	73	73	port 2.2 or PWM1 output
P2.1/PWM0	73	73	73	73	72	72	72	72	port 2.1 or PWM0 output
P2.0/TPWM	74	74	74	74	71	71	71	71	port 2.0 or Tuning PWM output
VDDP(3.3V)	75	75	75	75	70	70	70	70	supply to periphery (3.3V)
P1.7/SDA	76	76	76	76	69	69	69	69	port 1.7 or I2C-bus data line
P1.6/SCL	77	77	77	77	68	68	68	68	port 1.6 or I2C-bus clock line
P1.3/T1	78	78	78	78	67	67	67	67	port 1.3 or Counter/Timer 1 input
VDDA(1.8V)	1	–	–	–	64	–	–	–	supply
P1.1/T0	–	79	79	79	–	66	66	66	port 1.1 or Counter/Timer 0 input
P1.0/INT1	80	80	80	80	65	65	65	65	port 1.0 or external interrupt 1

[1] The function of these pins is dependent on some I2C-bus control bits. More details are given in Table 9.

[2] The choice between two mono inputs or one stereo input is realized by means of the bits SAS3-0.

[3] The SSIF input is selected by means of the SSIFM bit

[4] The function of this pin is selected by means of the SVO1-0 bits

[5] The function of this pin is selected by means of the CMB2-0 bits

[6] The function of the VGUARD/SWIO pin in controlled by the VGM1-0 and LED bits

2. LA78040_Vertical Output

Overview

The LA78040N is a vertical deflection output IC for high image quality TV and CRT displays that supports the use of a bus control system signal-processing IC. The sawtooth waveform from the bus control system signal-processing IC can directly drive the deflection yoke (including the DC component). Color TV vertical deflection system adjustment functions can be controlled over a bus system by connecting the LA78040N to a Sanyo LA768X series or LA769XX series bus control system signal-processing IC.

Since the LA78040N provides a maximum deflection current of 1.7Ap-p, it is optimal for small and medium size CRTs.

Functions

- Built-in pump-up circuit for low power dissipation.
- Vertical output circuit.
- Thermal protection circuit.

Parameter	Symbol	Conditions	Ratings	Unit
Pump-up block supply voltage	+B2 max		34	V
Output block supply voltage	+B6 max		70	V
Allowable power dissipation	Pd max	Mounted on an arbitrarily large heat sink.	9	W
Deflection output current	I5 max		-1.4 to +1.4	Ap-o
Thermal resistance	θj-c		3	℃/W
Operating temperature	Topr		-20 to +85	℃
Storage temperature	Tstg		-40 to +150	℃

Specifications

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	+B2		24	V
Operating supply voltage range	+B2op		16 to 33	V
Deflection output current	I5p-p		To 1.8	Ap-p

Maximum Ratings at Ta = 25℃

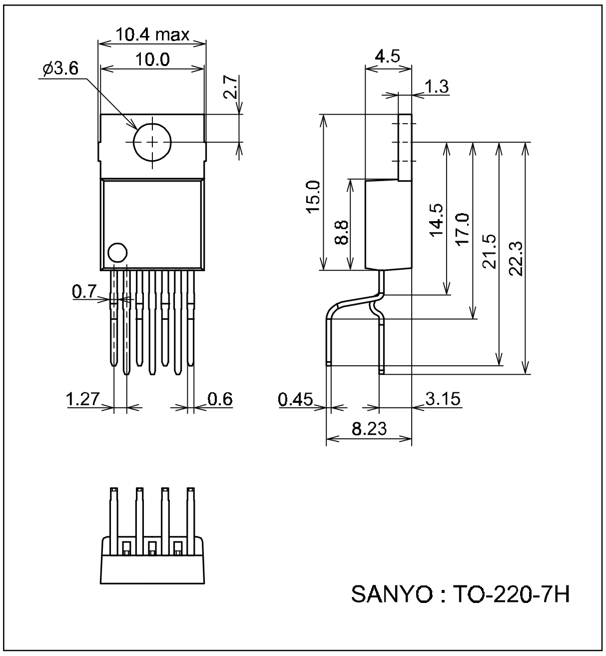
Operating Conditions at Ta = 25℃

Parameter	Symbol	Conditions	Ratings			
			min	typ	max	
Deflection output saturation voltage (lower)	Vsat5-4	I5 = 0.9A			1.3	
Deflection output saturation voltage (upper)	Vsat6-5	I5 = -0.9A			3.2	
Pump-up charge saturation voltage	Vsat3-4	I3 = 20mA			1.8	
Pump-up discharge saturation voltage	Vsat2-3	I3 = 0.9A			3.0	
Idling current	Idl		20		50	
Midpoint voltage	Vmid		11.0		13.0	

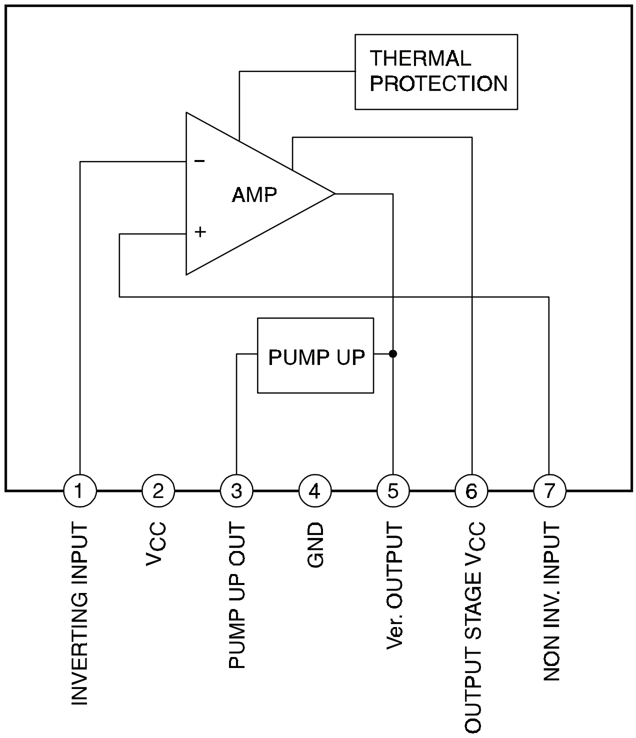
Package Dimensions

unit : mm

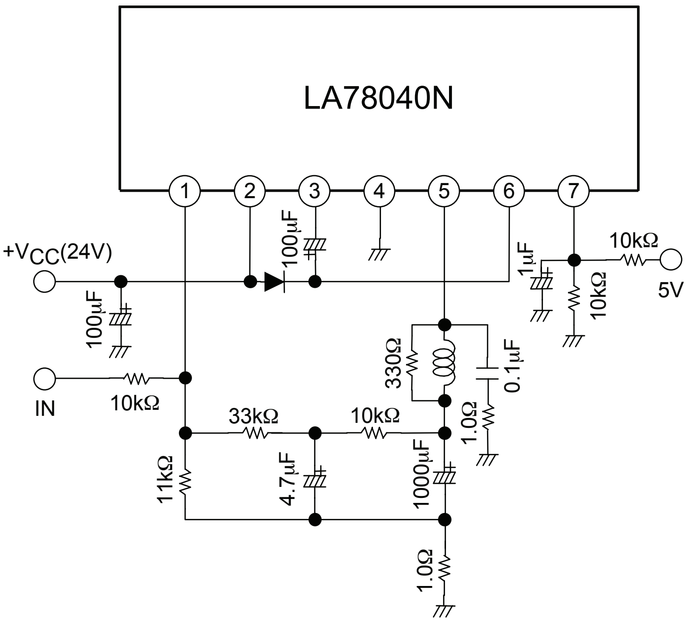
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Block Diagram



Application Circuit Example 1 (Single power supply)



3. STC403 EW Driver

Features

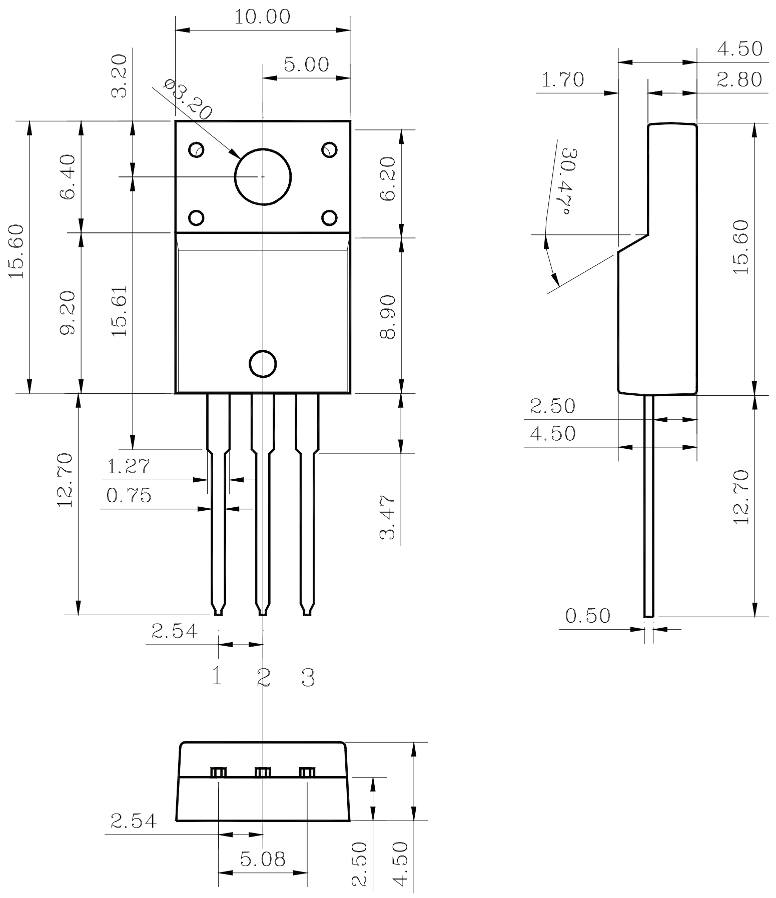
- Power Transistor General Purpose application
- Low saturation voltage
  : $V_{CE(SAT)}$=0.4V Typ.
- High Voltage : V_{CEO}=60V Min.

Ordering Information

Type NO.	Marking	Package Code
STC403	STC403	TO-220F

Outline Dimensions

unit : mm

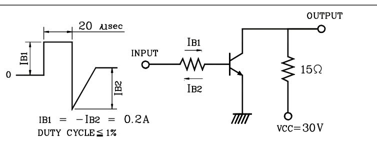


PIN Connections
1. Base
2. Collector
3. Emitter

Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	VCBO	80	V
Collector-Emitter voltage	VCEO	60	V
Emitter-base voltage	VEBO	5	V
Collector current	IC	3	A
Collector dissipation (Tc=25°C)	PC	15	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55~150	°C

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter breakdown voltage	BV_{CEO}	I_C=50mA, I_B=0	60	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0	-	-	50	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	50	μA
DC current gain	h_{FE} *	V_{CE}=5V, I_C=0.5A	200	-	400	-
Base-Emitter on voltage	$V_{BE(ON)}$	V_{CE}=5V, I_C=0.5A	-	0.7	1	V
Collector-Emitter saturation voltage	$V_{CE(sat)}$	I_C=2A, I_B=0.2A	-	0.4	1	V
Transition frequency	f_T	V_{CB}=5V, I_C=0.5A	-	30	-	MH
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	20	-	pF
Switching Time	T_{on}		-	0.65	-	μs
	T_{stg}		-	1.3	-	
	T_f		-	0.65	-	

*** hFE rank : 200~400 Only**

Electrical Characteristic Curves

Fig. 1 Pc-Ta

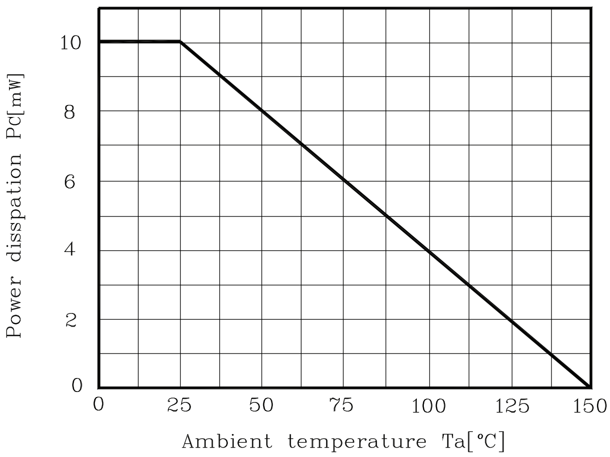


Fig. 2 VCE(sat) - IC

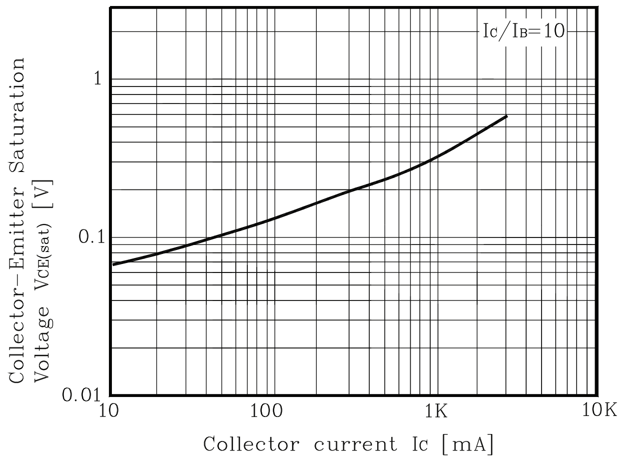


Fig. 3 hFE-IC

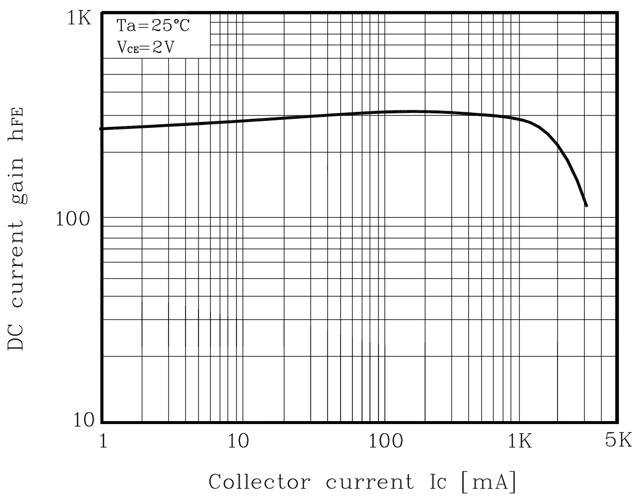
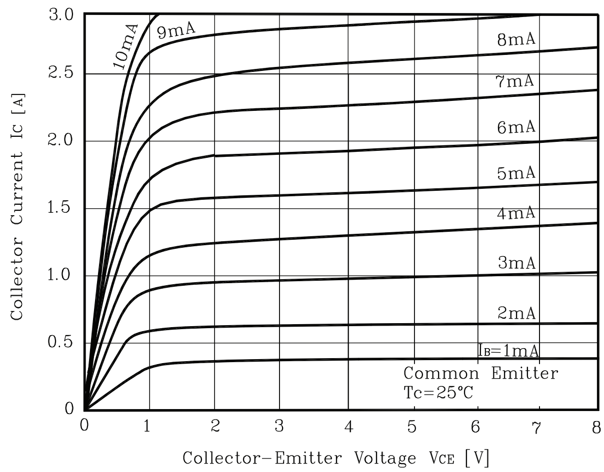


Fig. 4 -IC - VCE



4. 24WC16 - 16 KB EEPROM

Features :
- 16 Kbit serial I2C bus EEPROM
- 400KHz I2C Bus Compatible
- supply voltage : 1.8 V to 6.0 V
- Low Power CMOS Technology
- 1 Million Erase/Write cycles (minimum)
- 100 year data retention (minimum)

Pin description

Pin No.	Name	Description
1, 2, 3	A0, A1, A2	Device address – not used
5	SDA	Serial Data/Address Input/Output
6	SCL	Serial clock
7	WP	Write control
8	Vcc	Supply voltage
4	Vss	Ground

The memory device is compatible with the I2C memory standard. This is a two wire serial interface that uses a bi-directional data bus and serial clock. The memory carries a built-in 4-bit unique device type identifier code (1010) in accordance with the I2C bus definition.

Serial Clock (SCL)
The SCL input is used to strobe all data in and out of the memory.
Serial Data (SDA)
The SDA pin is bi-directional, and is used to transfer data in or out of the memory.

5. LA42072N

LA42072 is 7W 2-channel AF power amplifier intended for televisions.

Functions

- 7W × 2 channel (V_{CC} = 12V, R_L = 8Ω).
- Standby function.
- Mute function.
- Thermal protection circuit.

LA42000 series is power IC which made Pin compatible altogether in 5 to 15W. They consist of four kinds of power ICs (mono, stereo, mono with volume function, stereo with volume function. They realized PCB layout communalization of a audio power block of TV).

Model name	P_O	Channel		Volume
		Monaural	Stereo	
LA42051	5W	○		
LA42052	5W		○	
LA42351	5W	○		○
LA42352	5W		○	○
LA42071	7W	○		
LA42072	7W		○	
LA42152	15W		○	

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	No signal	24	V
Allowable power dissipation	Pd max	Infinite heat sink	15	W
Maximum junction temperature	Tj max		150	°C
Thermal resistance	θjc		3	°C/W
Operating temperature	Topr		-25 to +75	°C
Storage temperature	Tstg		-40 to +150	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	unit
Recommended supply voltage	V_{CC}		12	V
Recommended load resistance	R_L		8	Ω
Allowable operating voltage range	V_{CC} op		5.5 to 20	V

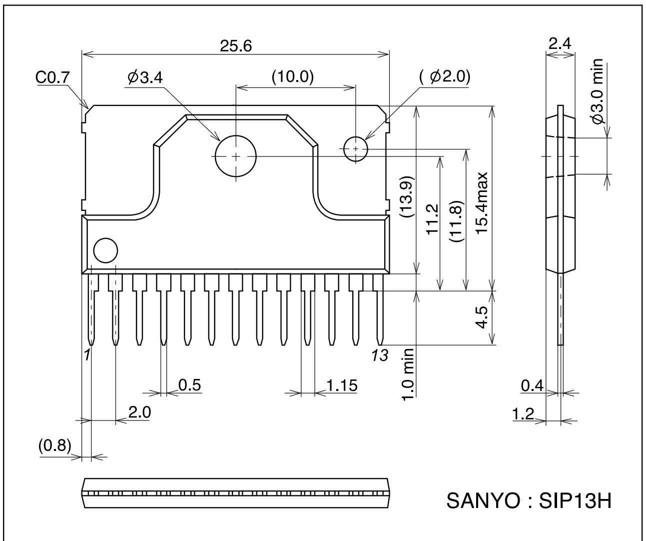
Electrical Characteristics at Ta = 25°C, V_{CC} = 12V, R_L = 8Ω, f = 1kHz, Rg = 600 Ω

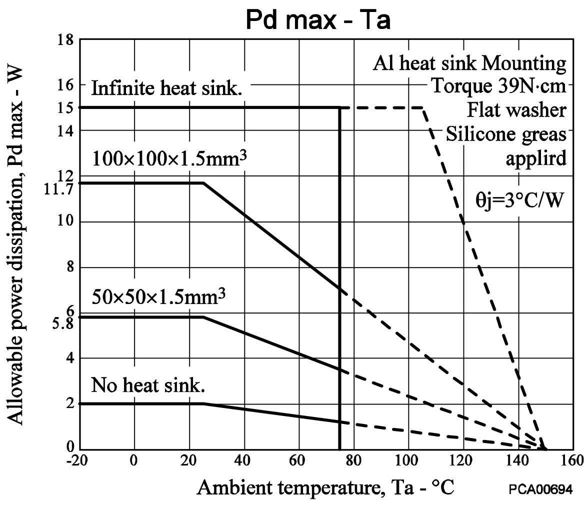
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Standby current	I_{ST}	Amplifier off		0	10	μA
Quiescent current	I_{CCO}	Rg = 0	40	70	150	mA
Output power	P_O	THD = 10%	6	7		W
Total harmonic distortion	THD	P_O = 1W		0.06	0.2	%
Voltage gain	VG	V_O = 0dBm	33	35	37	dB
Output noise voltage	V_{NO}	Rg = 0, BPF = 20Hz to 20kHz		0.1	0.3	mVrms
Ripple rejection	SVRR	Rg = 0, f_R = 100Hz, $V_{CC}R$ = 0dBm	50	60		dB
Channel separation	CH.Sep	Rg = 10kΩ, V_O = 0dBm	50	60		dB
Mute Attenuation	ATT	Vo=1Vrms,BPF=20Hz to 20kHz	80	90		dB
Mute control voltage (pin 6)	Vmute	Mute ON	1.7		3.0	V
		Mute OFF	0		0.5	V
Standby control voltage (The Pin 5 voltage)	V_{ST}	Amplifier on	2.5		20	V
		Amplifier off	0		0.5	V
Input resistance	R_i		14	20	26	kΩ

Package Dimensions

unit : mm

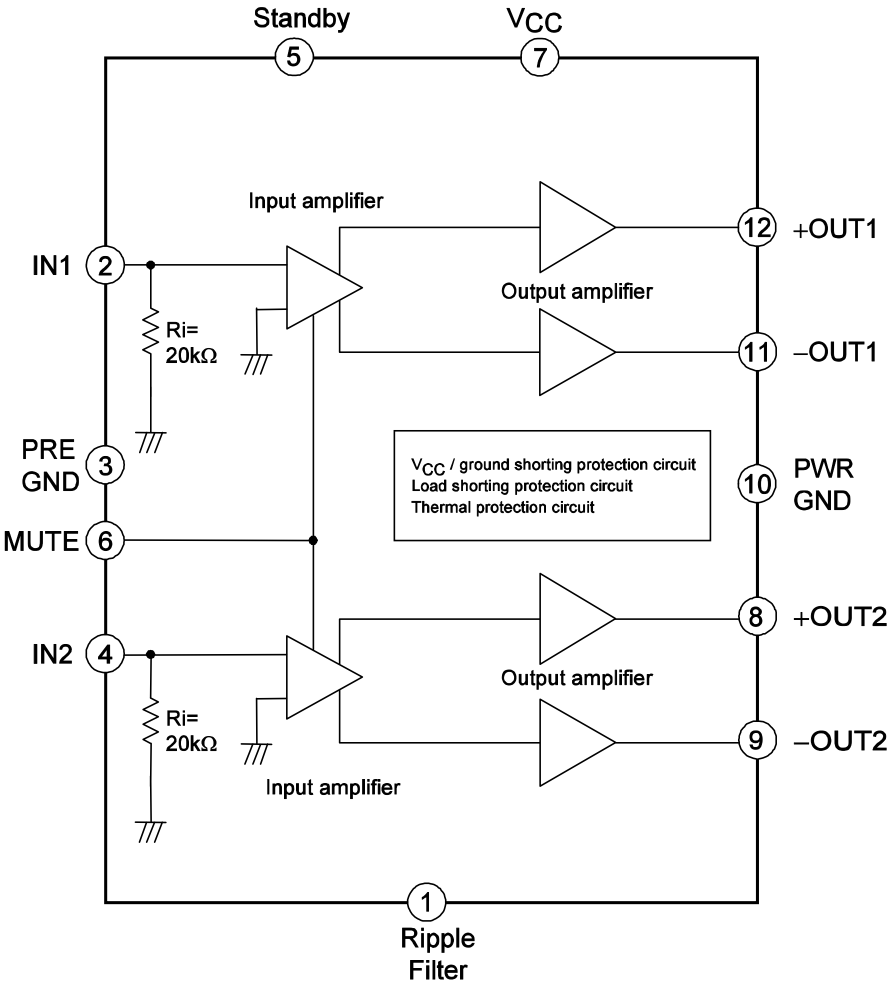
3107B





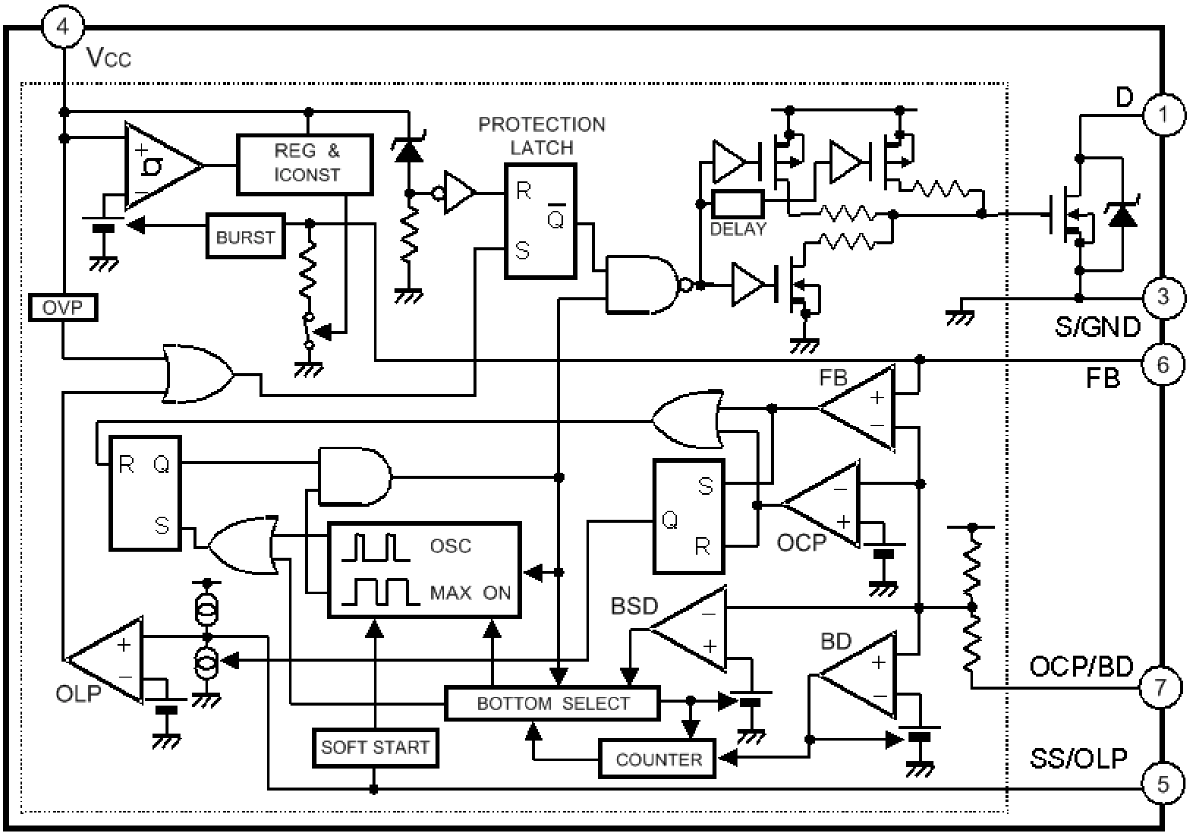
IC DESCRIPTION

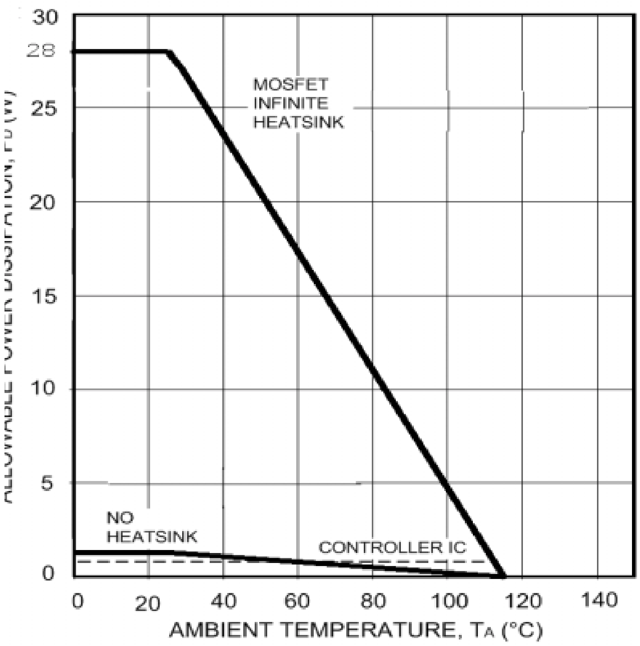
Block Diagram



6. STR-6754

FUNCTIONAL BLOCK DIAGRAM





FEATURES AND BENEFITS (cont'd)

- Auto-Bias Function
  Stable Burst Operation Without Generating Interfere
- Internal Off-Timer Circuit
- Built-In Constant-Voltage Drive
- Multiple Protections:
  Pulse-by-Pulse Overcurrent Protection
  Overload Protection with Auto Recovery
  Latching Overvoltage Protection
  Undervoltage Lockout with Hysteresis
- RoHS Compliant

IC DESCRIPTION

ELECTRICAL CHARACTERISTICS at T_A = +25°C, V_{CC} = 20 V, voltage measurements are referenced to S/GND terminal (unless otherwise specified).

Characteristic	Symbol	Test Conditions	Limits Min.	Typ.	Max.	Units
Start-Up Operation						
Operation Start Voltage	$V_{CC(ON)}$	Turn-on, V_{CC} = 0 → 19.9 V	16.3	18.2	19.9	V
Soft-Start Operation Stop Voltage	$V_{SS/OLP}$		1.1	1.2	1.4	V
Soft-Start Oper. Charging Current	$I_{SS/OLP}$		-390	-550	-710	μA
Operation Stop Voltage	$V_{CC(OFF)}$	Turn-off, V_{CC} = 19.9 → 8.8 V	8.8	9.7	10.6	V
Circuit Current in Non-Operation	$I_{CC(OFF)}$	V_{CC} = 15 V	–	–	100	μA
Normal Operation						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 300 μA	650	–	–	V
Drain Leakage Current	I_{DSS}	V_{DS} = 650 V	–	–	300	μA
On-State Resistance	$r_{DS(on)}$	I_D = 1.9 A, T_J = +25°C	–	–	0.96	Ω
Switching Time	t_f		–	–	400	ns
Circuit Current	$I_{CC(ON)}$		–	–	6.0	mA
Oscillation Frequency	f_{osc}		19	22	25	kHz
Bottom-Skip Oper. Threshold Volt.	$V_{OCPBD(BS1)}$		-605	-665	-720	mV
	$V_{OCPBD(BS2)}$		-385	-435	-485	mV
Quasi-Resonant Oper. Threshold	$V_{OCPBD(TH1)}$		280	400	520	mV
	$V_{OCPBD(TH2)}$		670	800	930	mV
Feedback-Pin Threshold Voltage	$V_{FB(OFF)}$		1.32	1.45	1.58	V
Feedback-Pin Current	$I_{FB(ON)}$		600	1000	1400	μA
Standby Operation						
Standby Operation Start Voltage	$V_{CC(S)}$	V_{CC} = 0 → 12.2 V	10.3	11.1	12.1	V
Standby Oper. Start Volt. Interval	V_{CC}		1.10	1.35	1.65	V
Standby Non-Operation Current	$I_{CC(S)}$	V_{CC} = 10.2 V	–	20	56	μA
Feedback-Pin Current	$I_{FB(ON)}$	V_{CC} = 10.2 V	–	4.0	14	μA
Feedback-Pin Threshold Voltage	$V_{FB(S)}$	V_{CC} = 12.2 V	0.55	1.10	1.50	V
Minimum ON Time	$t_{on(min)}$		0.5	0.8	1.2	μs

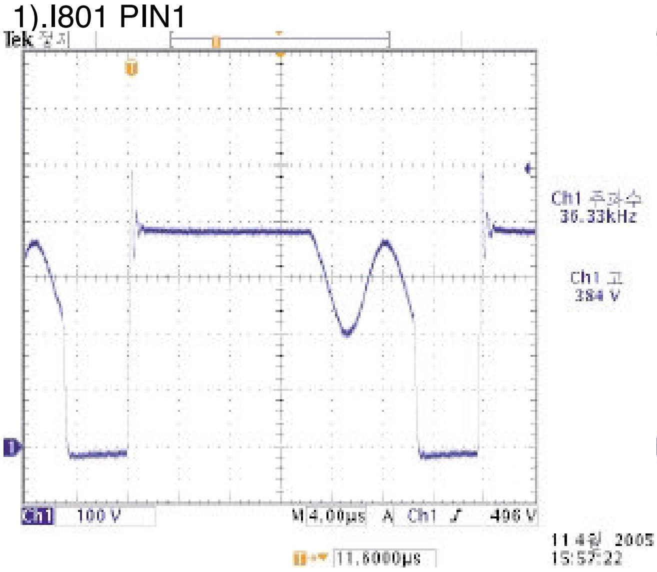
ELECTRICAL CHARACTERISTICS at T_A = +25°C, V_{CC} = 20 V, voltage measurements are referenced to S/GND terminal (unless otherwise specified).

Characteristic	Symbol	Test Conditions	Limits			
			Min.	Typ.	Max.	Units
Protection Operation						
OVP Operation Voltage	$V_{CC(OVP)}$	Turn-off, V_{CC} = 0 → 29.9 V	25.5	27.7	29.9	V
Maximum ON Time	$t_{on(max)}$		27.5	32.5	39.0	μs
OLP Operation Voltage	V_{SSOLP}		4.0	4.9	5.8	V
OLP Operation Current	I_{SSOLP}		-6.0	-11	-16	μA
Overcurrent Detect. Threshold Volt.	$V_{OCPBD(LIM)}$		-0.895	-0.940	-0.995	V
OCP/BD-Pin Current	I_{OCPBD}		-40	-100	-250	μA
Latch Holding Current	$I_{CC(H)}$	V_{CC} = 29.9 → $V_{CC(OFF)}$ – 0.3 V	–	45	140	mA
Latch Release Voltage	$V_{CC(L)}$	V_{CC} = 29.9 → 6 V	6.0	7.2	8.5	V
Other						
Thermal Resistance	$R_{\theta JF}$	Output junction-to-frame	–	–	1.6	°C/W

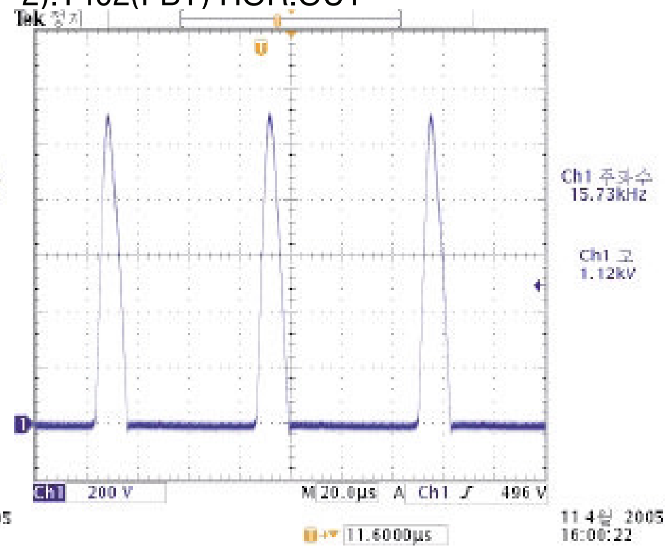
NOTES: 1. Typical Data is for design information only.
2. Negative current is defined as coming out of (sourcing) the specified device termninal.

WAVEFORMS

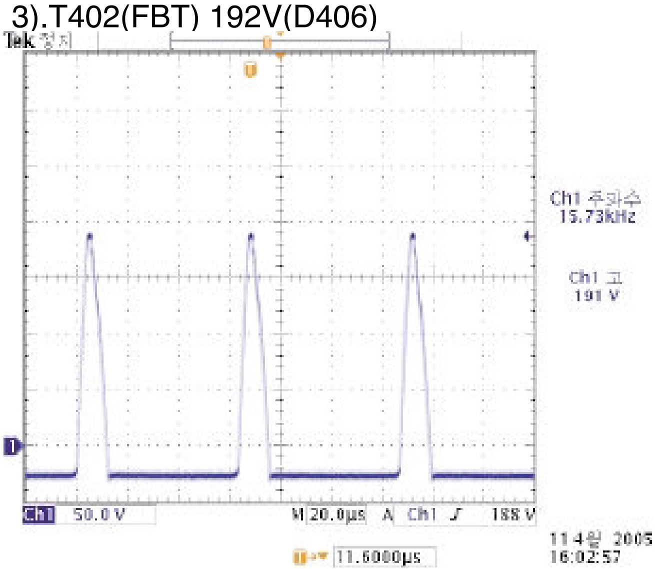
1).I801 PIN1



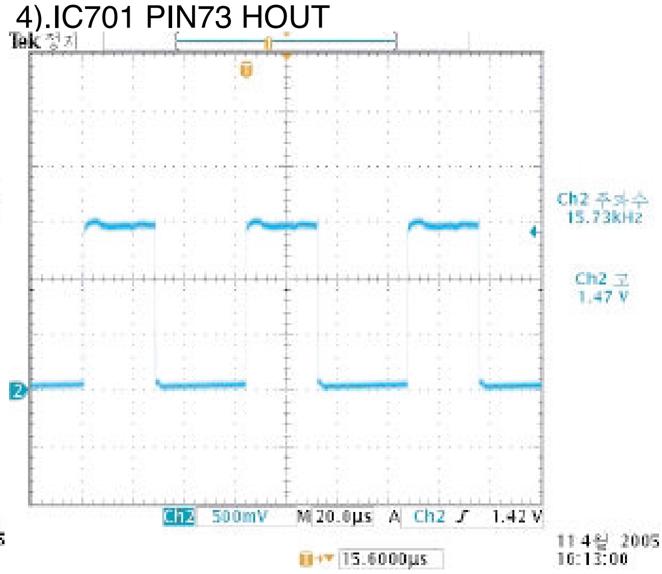
2).T402(FBT) HOR.OUT



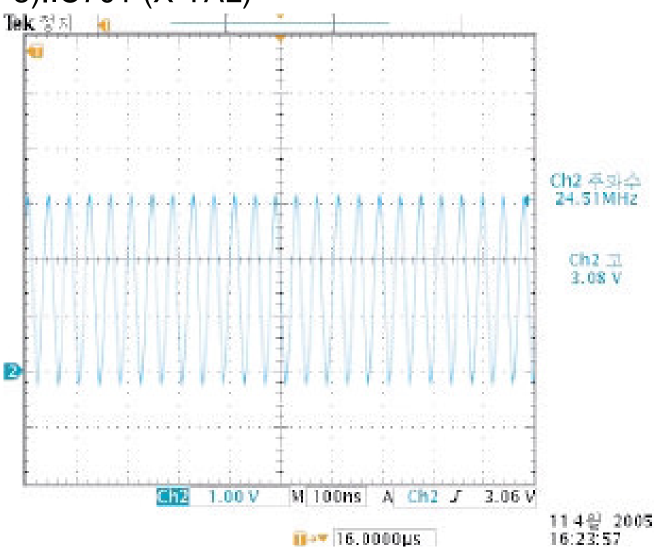
3).T402(FBT) 192V(D406)



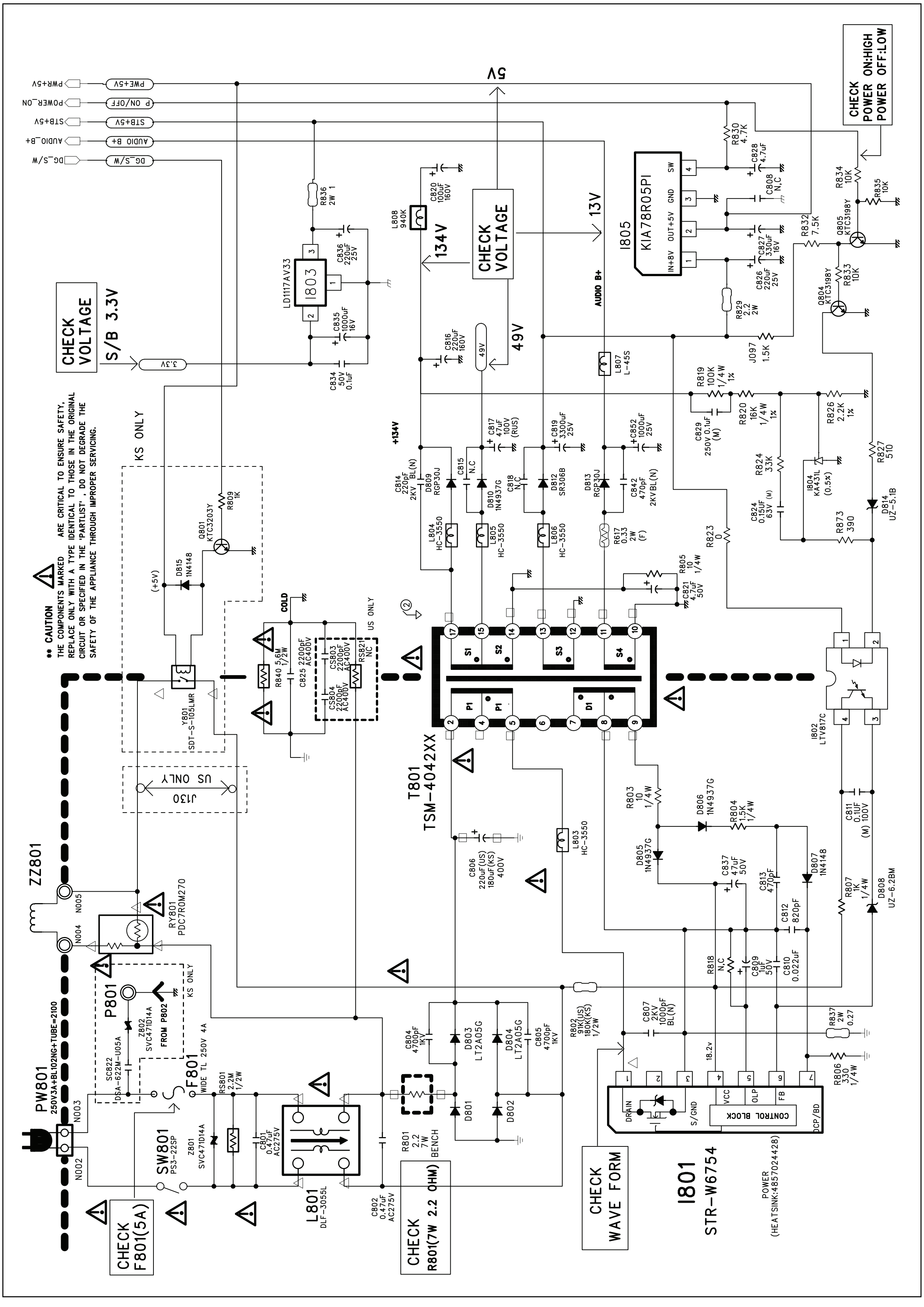
4).IC701 PIN73 HOUT



5).IC701 (X-TAL)

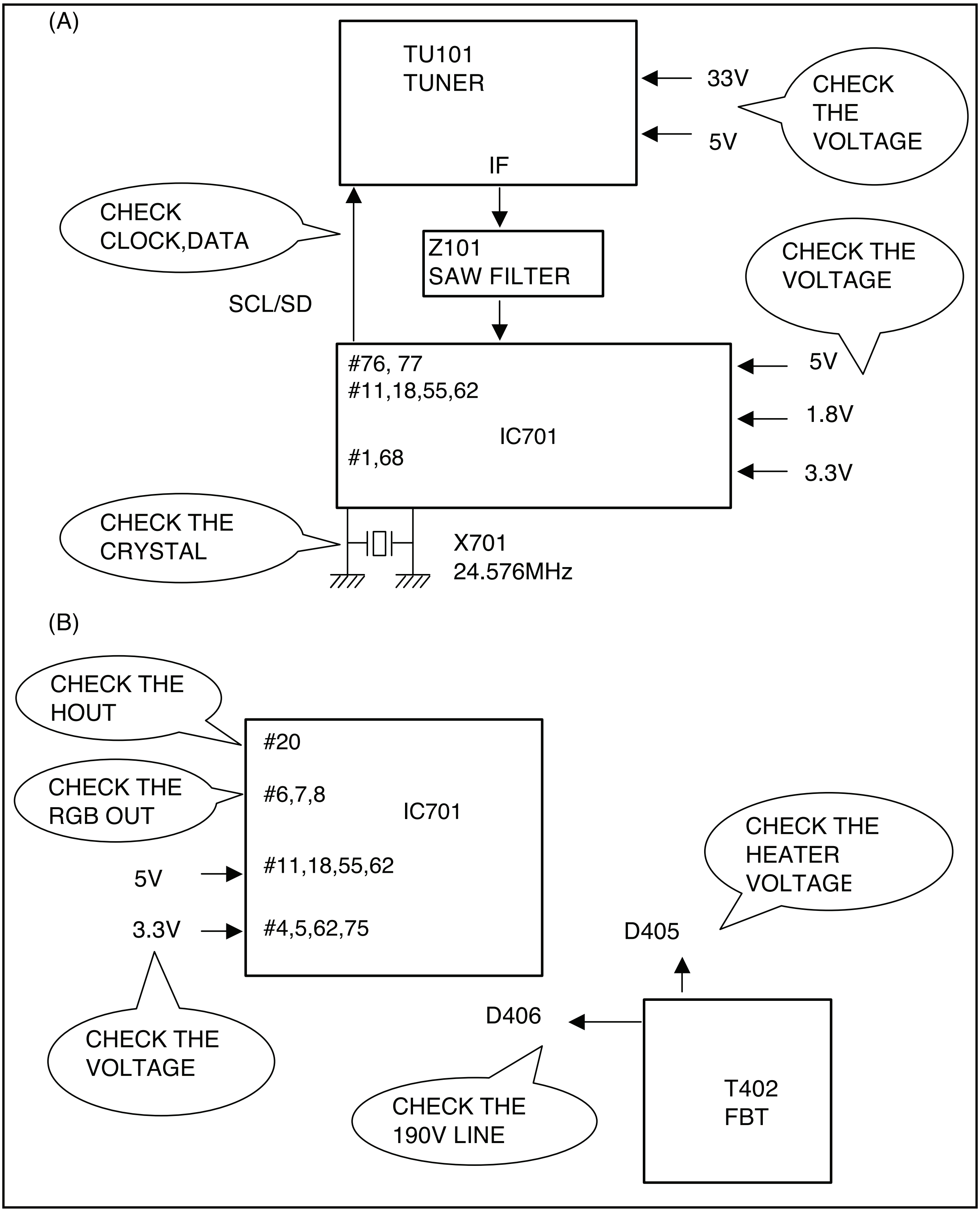


1. NO POWER


CHECK F801(5A)
CHECK R801(7W 2.2 OHM)
CHECK WAVE FORM
CHECK VOLTAGE
S/B 3.3V
CHECK VOLTAGE
CHECK
POWER ON:HIGH
POWER OFF:LOW
T801
TSM-4042XX
I801
STR-W6754
I805
KIA78R05PI

2. NO PICTURE

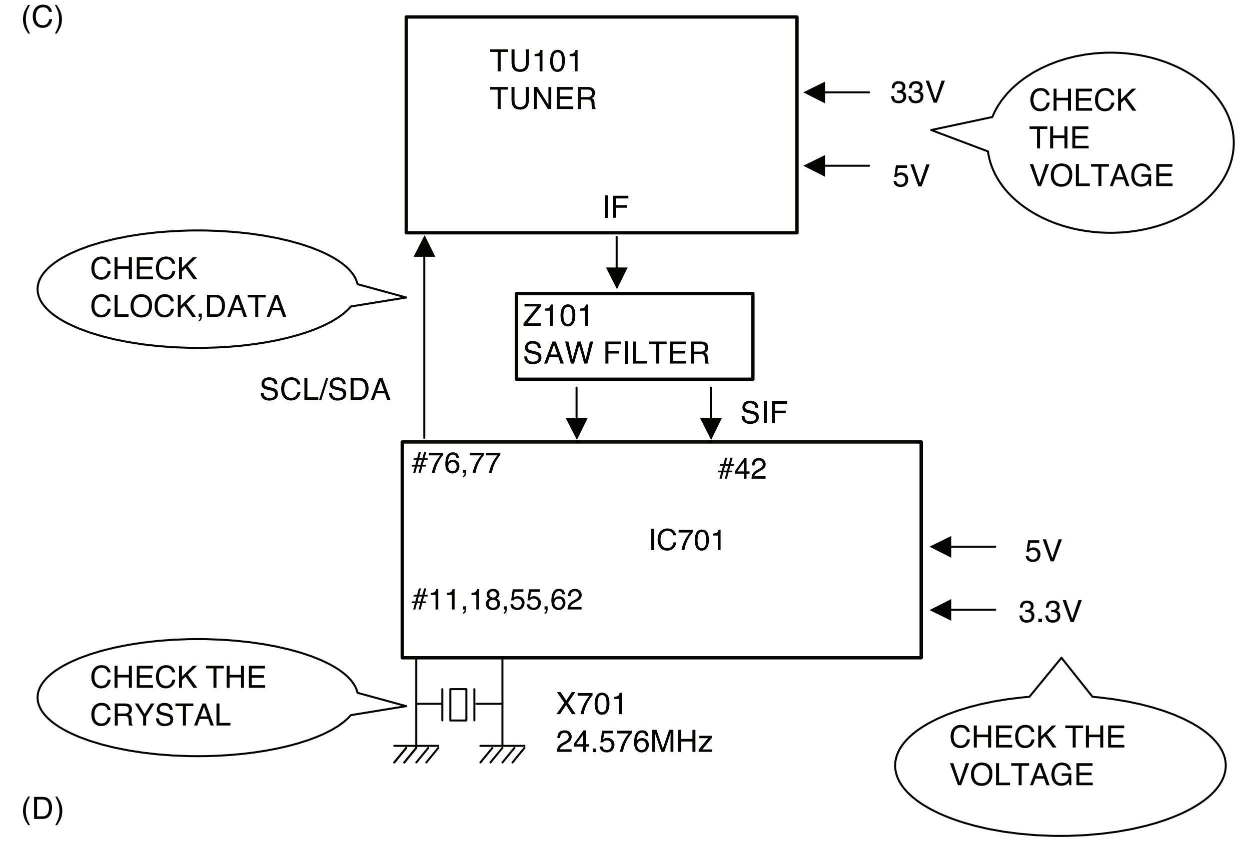
Check The Waveform of TU101 IF PIN	NG : Go To The Figure (A)
	OK : Go To The Figure (B)



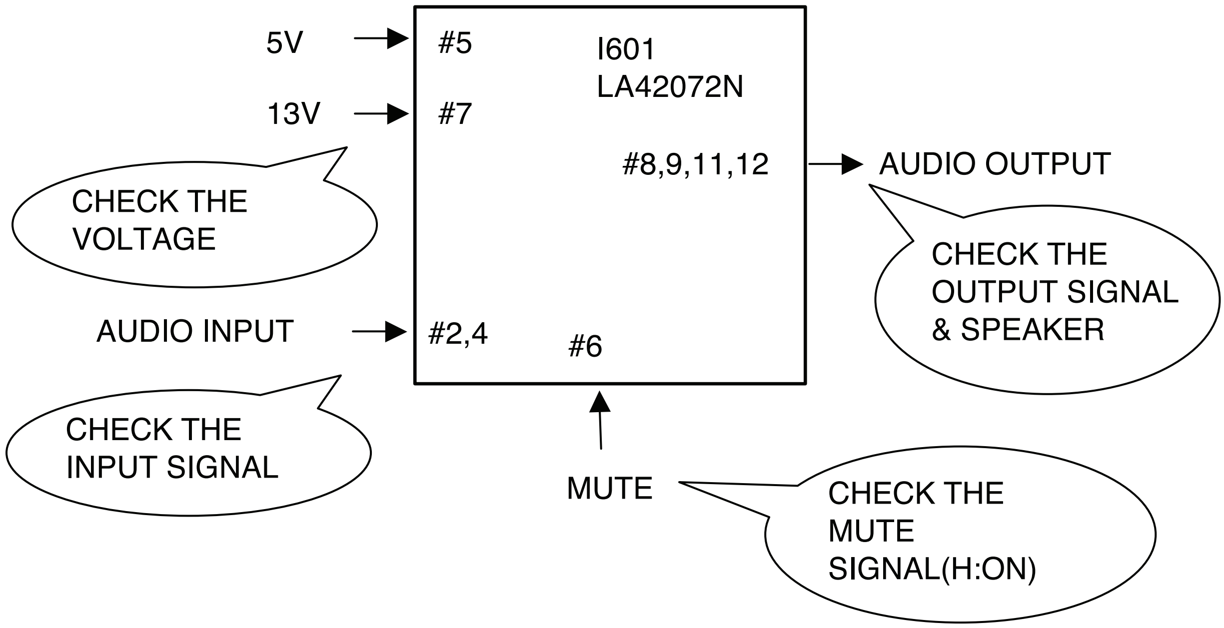
3. NO SOUND

Check The Output Signal of I701 #57,58	NG : Go To The Figure (C)
	OK : Go To The Figure (D)

(C)



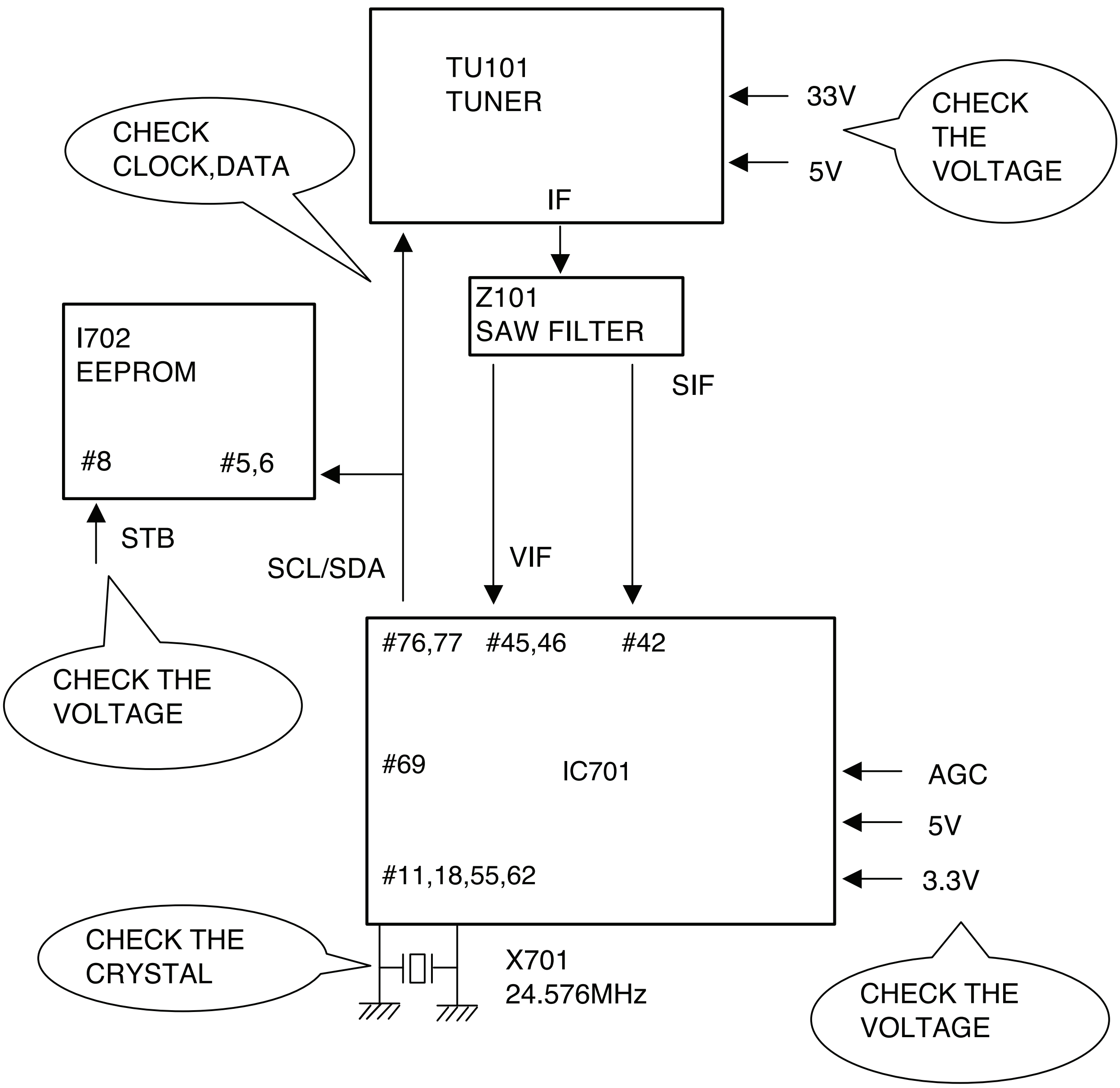
(D)



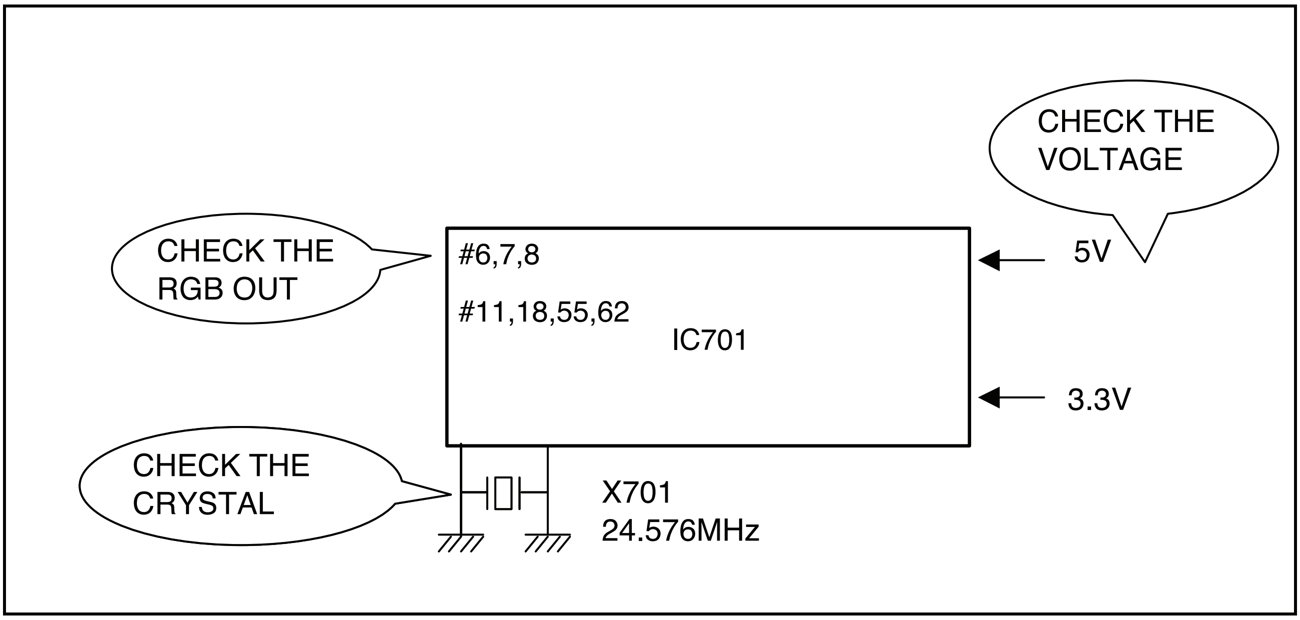
4. CH DON'T MEMORY or SKIP

Check The Input Signal Conditions	NG : Loss of Signal or Weak Signal
	OK : Go To The Figure (E)

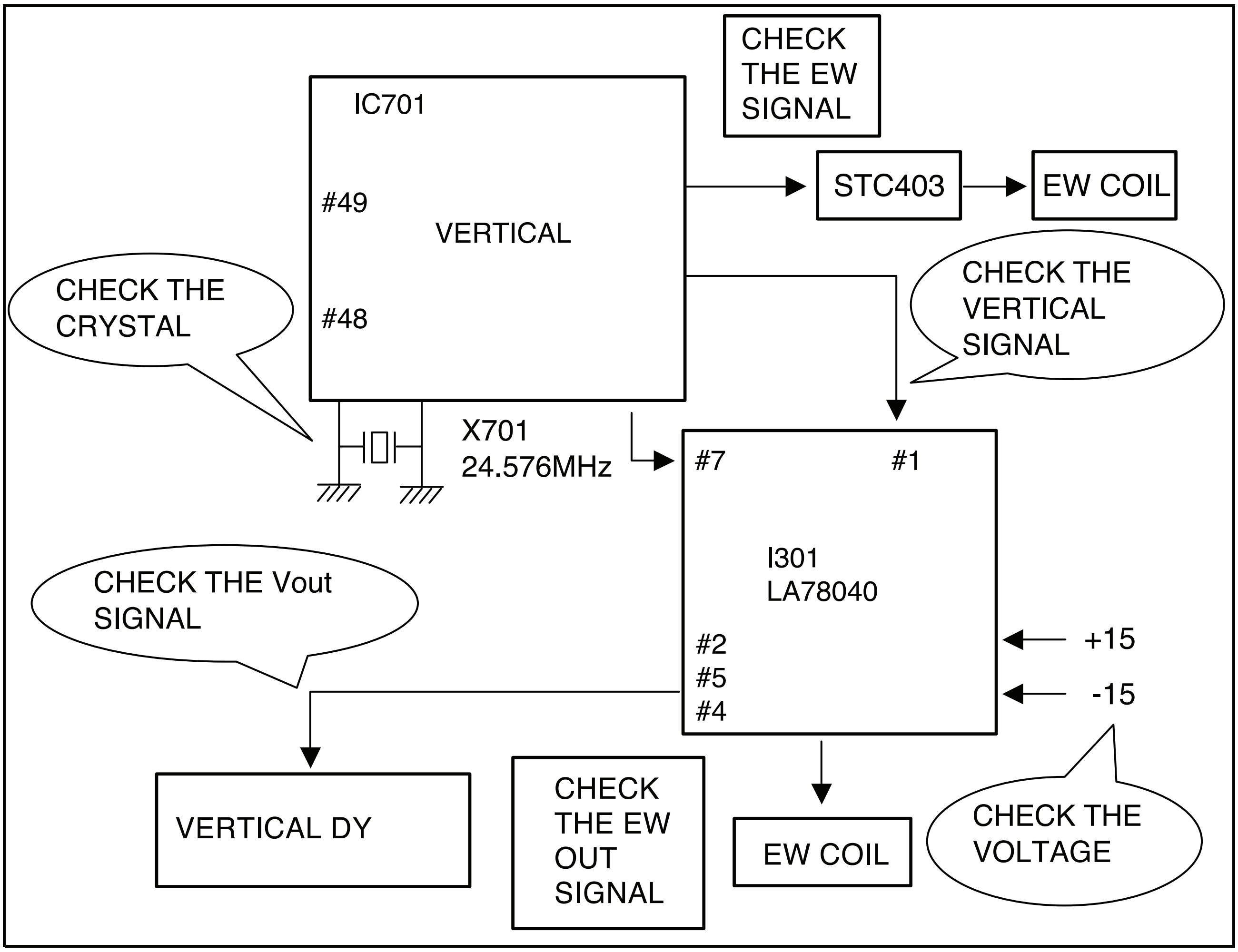
(E)



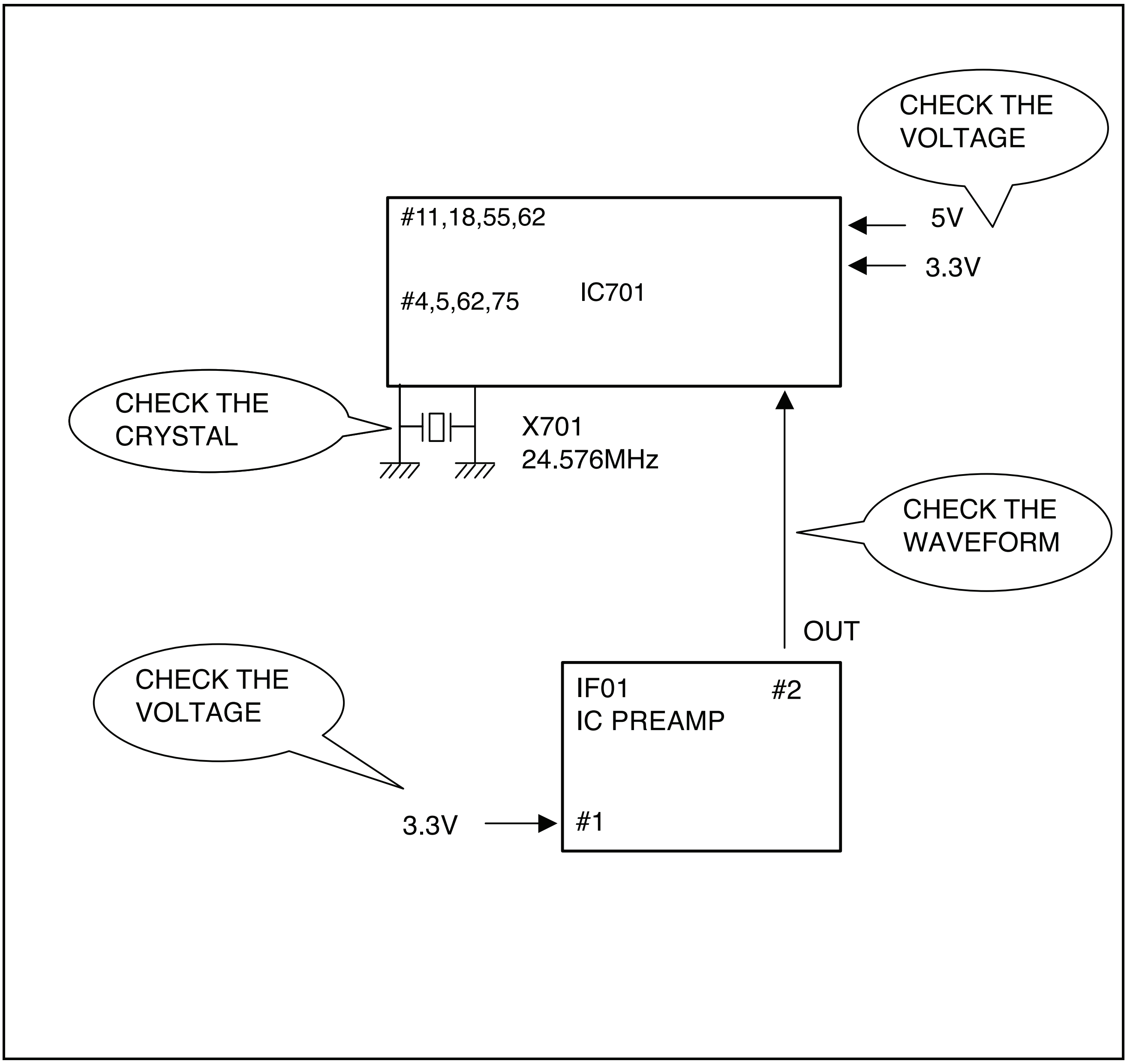
5. NO COLOR



6. NO VERTICAL DEFLECTION OR PINCUSHION BADNESS



7. REMOTE CONTROL DOES NOT OPERATE



ELECTRICAL PARTS LIST

Caution

:In this Manual, some parts can be changed for improving. their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List)in Service Information Center(http://svc.dwe.co.kr)

The Differential Part Lists by Models.

MODEL	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION
DTH-21S7STF	IC701	1TDA2140H1	IC MICOM FLASH	TDA12140H1/N2
DTH-21S7STFB				
DTH-21S8STF				
DTH-21S8STFB				
DTQ-21S7STF		1TDA2100H1	IC MICOM FLASH	TDA12100H1/N2
DTQ-21S7STFB				
DTQ-21S8STF				
DTQ-21S8STFB				

**** This is based on DTH-21S7STF**

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
1	ZZ100	48B6259A01	TRANSMITTER REMOCON	R-59A01 (AAA)	
2	ZZ110	PTACPWK210	ACCESSORY AS	DTH-21S7SSF	
3	00010	4850A04110	ANT ROD	SHA-004AR	
4	00030	4850Q00910	BATTERY	R03/NN	
5	00040	4850A00650	TRANS ANT MATCHING	YSC-T-07 BR	
6	10000	48586054K1	MANUAL INSTRUCTION	DTM-2082CW	
7	AD001	4859000240	ADAPTER	2P15A 300V(D=4.0)	
8	M351	4853534301	HOLDER ANT	HIPS BK	
9	M821	4858213803	BAG INSTRUCTION	L.D.P.E TO.05X250X400(+20)	
10	ZZ120	PTBCSHK201	COVER BACK AS	DTQ-21S7	
11	M211	4852179501	COVER BACK	HIPS BK	
12	M781	4857817630	CLOTH BLACK	FELT 400X20X0.7	
13	M782	4857817611	CLOTH BLACK	FELT 200X20X0.7	
14	M783	4857817610	CLOTH BLACK	FELT 300X20X0.7	
15	ZZ130	PTPKCPK201	PACKING AS	DTQ-21S7	
16	10	6520000365	STAPLE PIN	AUTO W65 ROHS(E ZN)	
17	M801	4858072900	BOX CARTON	DW-3 21S7	
18	M811	485819DG00	PAD	EPS	
19	M821	4858215001	BAG P.E	PE FOAM t0.5x1200x1150	
20	ZZ131	48519A8610	CRT GROUND NET	2104S-1015-1P	
21	ZZ132	58G0000177	COIL DEGAUSSING	DC-21SF AL	
22	ZZ140	PTCACAK219	CABINET AS	DTH-21S7STF	

ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
23	40	2TF01612CL	TAPE FILAMENT	T0.15XW12MMXL50M CLEAR	
24	M201A	4856017703	SCREW CRT FIX	5X30 L80 BK 3CR	
25	M201B	4856017710	SCREW CRT FIX	5X30 L190 BK 3CR	
26	M201C	4856219502	WASHER RUBBER	CR T2.0 BLACK	
27	M211A	7172401452	SCREW TAPPTITE	TT2 TRS 4X14 MFZN BK 3CR	
28	M211B	7178301252	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK 3CR	
29	M541	4855419800	SPEC PLATE	ART 150	
30	M686	4856812001	TIE CABLE	NYLON66 DA100	
31	M831	7178301051	SCREW TAPPTITE	TT2 WAS 3X10 MFZN 3CR	
32	SP01A	7178301051	SCREW TAPPTITE	TT2 WAS 3X10 MFZN 3CR	
33	SP02A	7178301051	SCREW TAPPTITE	TT2 WAS 3X10 MFZN 3CR	
34	V901	4859600563	CRT	A51QGT420X39 M20	
35	ZZ200	PTFMSJK201	MASK FRONT AS	DTQ-21S7	
36	M191	4851957900	DECO SENSOR AS	3569111+5557500	
37	M191A	7178301252	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK 3CR	
38	M201	4852095611	MASK FRONT	HIPS GY	
39	M481	4854872511	BUTTON POWER	ABS GY	
40	M481A	4856716000	SPRING	SWPA PIE0.5	
41	M561	48556152SD	MARK BRAND	SILVER DIA-CUTTING	
42	M781	4857821103	CLOTH BLACK	FELT 180X10X1.5	
43	ZZ210	PTSPPWK201	SPEAKER AS	DTQ-21S7	
44	P601A	4850704S31	CONNECTOR	YH025-04+YRT205+ULW800400	
45	SP01A	4858318910	SPEAKER	SP-50110F05C	
46	SP02A	4858318910	SPEAKER	SP-50110F05C	
47	ZZ290	PTMPMSK219	PCB MAIN MANUAL AS	DTH-21S7STF	
48	100	2193110032	SOLDER WIRE	SPOO1 PHI 3.0MM (LFCO-W3.0)	
49	200	2193011612	SOLDER WIRE	LFC-107(1.6MM)	
50	300	2291050623	FLUX SOLDER LF	SV-PBF-304P(0.823)	
51	400	2291050312	FLUX SOLVENT	S-3000	
52	C401	CEYD1H689W	C ELECTRO	50V RHD 6.8MF (16X35.5)	
53	C406	CMYF2G224J	C MYLAR	400V MPP 0.22MF J	
54	C407	CMYH3C822J	C MYLAR	1.6KV BUP 8200PF J	
55	C408	CMYH3C562J	C MYLAR	1.6KV BUP 5600PF J	
56	C424	CMYE2G104J	C MYLAR	400V PU 0.1MF J	
57	C425	CMYE2G473J	C MYLAR	400V PU 0.047MF J	
58	C801	CL1UC3474M	C LINE ACROSS	0.47MF 1J(UCVSNDF/SV)+Q/O	
59	C806	CEYD2G221D	C ELECTRO	400V FHS 220MF (25X40)	
60	C807	CBYB3D102K	C CERA SEMI	2KV BL(N) 1000PF K	
61	C816	CEYF2C221V	C ELECTRO	160V RSS 220MF (18X35.5)	
62	C819	CEYF1E332V	C ELECTRO	25V RSS 3300MF (16X31.5)	
63	CS803	CH1BFE222M	C CERA AC	U/C/V AC400V 2200PF	
64	CS804	CH1BFE222M	C CERA AC	U/C/V AC400V 2200PF	
65	D402	DDGP30L---	DIODE	DGP30L	
66	D403	DRGP30JP--	DIODE	RGP-30JP	

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
67	D809	DRGP30JP--	DIODE	RGP-30JP	
68	D812	DSR306E20-	DIODE	SR306E20	
69	D813	DRGP30JP--	DIODE	RGP-30JP	
70	DL701	DLH2PR04--	LED BLOCK	LH-2P-R-04	
71	I301	PTD2SW7923	HEAT SINK ASS`Y	DTH-21S7STF	
72	00001	1LA78040--	IC VERTICAL	LA78040	
73	0000A	4857027923	HEAT SINK	AL EX	
74	0000B	7174301051	SCREW TAPPTITE	TT2 RND 3X10 MFZN 3CR	
75	I601	PTP2SW8210	HEAT SINK ASS`Y	1LA42072N- + 7174300851	
76	00001	1LA42072N-	IC AUDIO AMP	LA42072N-E	
77	0000A	4857028210	HEAT SINK	AL EX	
78	0000B	7174300851	SCREW TAPPTITE	TT2 RND 3X8 MFZN 3CR	
79	I702	124LC16B1B	IC MEMORY	24LC16B1B	
80	I801	PTA2SW4428	HEAT SINK ASS`Y	1STRW6754- + 7174300851	
81	00001	1STRW6754-	IC POWER	STR-W6754	
82	0000A	4857024428	HEAT SINK	AL EX NON-ANODIZING	
83	0000B	7174300851	SCREW TAPPTITE	TT2 RND 3X8 MFZN 3CR	
84	I802	1EL817C---	IC PHOTO COUPLER	EL817C	
85	I803	PTPBSW6900	HEAT SINK ASS'Y	1A1117P133 + 7174300851	
86	00001	1A1117P133	IC REGULATOR	KIA1117PI33 3.3V TO-220IS	
87	0000A	4857026900	HEAT SINK	AL EX	
88	0000B	7174300851	SCREW TAPPTITE	TT2 RND 3X8 MFZN 3CR	
89	I805	1K78R05---	IC REGULATOR	KIA78R05API	
90	IF01	1346VF6---	IC PREAMP	346VF6	
91	JP01	4859105240	JACK PHONE	LGT1516-0100	
92	JP02	4859111650	JACK PIN	PH-JB-9514	
93	JP03	4859112850	JACK PIN	DPSS-0173(3P ST)	
94	L401	58C7070085	COIL CHOKE	TLN-3062A	
95	L402	58H0000108	COIL H-LINEARITY	TRL-440D	
96	L403	58C0000172	COIL CHOKE	CH-232B	
97	L404	58C0000173	COIL CHOKE	CH-481GA	
98	L801	5PDLF3055L	FILTER LINE	DLF-3055L	
99	L807	58C0000090	COIL CHOKE	L-45S	
100	M231	4852332511	PANEL CTRL	ABS GY	
101	M231A	7178301051	SCREW TAPPTITE	TT2 WAS 3X10 MFZN 3CR	
102	M491	4854963311	BUTTON CH	ABS GY + AL COATING	
103	P901B	4850705N18	CONNECTOR	YBNH250-05+YBNH250+ULW400	
104	P902B	4850704N16	CONNECTOR	YBNH250-04+YBNT250+ULW400	
105	PA10A	4859235320	CONN WAFER	YW025-10	
106	PA10B	4850710S19	CONNECTOR	YH025-10+YBNH250-10+ULW=400	
107	PK01A	4850703S08	CONNECTOR	YH025-03+YBH250-03+ULW=300	
108	PWC1	48599NL001	CORD POWER AS	EU LP-21+YH396-43V=2.0M	
109	PWC1A	4859289320	CONN WAFER	YW396-43V	
110	Q401	TKTC3229--	TR	KTC3229	

ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
111	Q402	PTK2SW7201	HEAT SINK ASS`Y	TTT2190YB + 7174300851	
112	00001	TTT2190YB-	TR HORI	TT2190LS-YB11	
113	0000A	4857027201	HEAT SINK	AL T1.0	
114	0000B	7174300851	SCREW TAPPTITE	TT2 RND 3X8 MFZN 3CR	
115	Q403	PTS2SW4903	HEAT SINK ASS`Y	DTH-21S7STF	
116	00001	TSTC403---	TR	STC403	
117	0000A	4857024903	HEAT SINK	AL EX	
118	0000B	7174300851	SCREW TAPPTITE	TT2 RND 3X8 MFZN 3CR	
119	Q901	TKTC3229--	TR	KTC3229	
120	Q902	TKTC3229--	TR	KTC3229	
121	Q903	TKTC3229--	TR	KTC3229	
122	R617	RF02Y338K-	R FUSIBLE	2W 0.33 OHM K	
123	R801	RX07B229JP	R CEMENT	7W 2.2 OHM J BEN 15MM 4P	
124	RY801	DTC7R0M270	POSISTOR	PDC7R0MP6B7Z81C	
125	SCT01	4859304130	SOCKET CRT	ISHG93S	
126	SW801	5S40101143	SW POWER PUSH	PS3-22SP (P.C.B)	
127	T401	5TD0000018	TRANS DRIVE	THD-120	
128	T402	50H0000334	FBT	BSC25-0218M	
129	T801	50M4042B6-	TRANS SMPS	TSM-4042B6	
130	TU101	4859726730	TUNER VARACTOR	TAEC-H012F(A)	
131	X701	5XJ24R576E	CRYSTAL QUARTZ	HC-49/S 24.576MHZ 30PPM	
132	Y801	5SC0101339	SW RELAY	SDT-S-105LMR	
133	Z101	5PTSB6221C	FILTER SAW	TSB6221C	
134	Z801	DSVC471D14	VARISTOR	SVC471D14A (BULK)	
135	ZZ200	PTMPJ2K219	PCB MAIN CHIP B AS	DTH-21S7STF	
136	CC103	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
137	CC105	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
138	CC109	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
139	CC119	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
140	CC129	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
141	CC131	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
142	CC612	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
143	CC702	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
144	CC703	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
145	CC705	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
146	CC706	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
147	CC712	HCBK561KBA	C CHIP CERA	50V X7R 560PF K 1608	
148	CC714	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
149	CC715	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
150	CC717	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
151	CC720	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
152	CC726	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
153	CC728	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
154	CC736	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
155	CC738	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
156	CC739	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
157	CC834	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
158	CCA03	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
159	CCA05	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
160	CCA06	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
161	IC701	1TDA2140H1	IC MICOM FLASH	TDA12140H1/N2	
162	RC101	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
163	RC102	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
164	RC103	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
165	RC104	HRFT100JBA	R CHIP	1/10 10 OHM J 1608	
166	RC105	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
167	RC108	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
168	RC111	HRFT181JBA	R CHIP	1/10 180 OHM J 1608	
169	RC114	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
170	RC121	HRFT183JBA	R CHIP	1/10 18K OHM J 1608	
171	RC301	HRFT202JBA	R CHIP	1/10 2K OHM J 1608	
172	RC306	HRFT202JBA	R CHIP	1/10 2K OHM J 1608	
173	RC461	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
174	RC462	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
175	RC463	HRFT182JBA	R CHIP	1/10 1.8K OHM J 1608	
176	RC464	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
177	RC610	HRFT223JBA	R CHIP	1/10 22K OHM J 1608	
178	RC623	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
179	RC626	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
180	RC632	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
181	RC701	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
182	RC702	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
183	RC703	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
184	RC705	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
185	RC709	HRFT823JBA	R CHIP	1/10 82K OHM J 1608	
186	RC713	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
187	RC714	HRFT123JBA	R CHIP	1/10 12K OHM J 1608	
188	RC720	HRFT562JBA	R CHIP	1/10 5.6K OHM J 1608	
189	RC722	HRFT100JBA	R CHIP	1/10 10 OHM J 1608	
190	RC727	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
191	RC736	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
192	RC737	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
193	RC769	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
194	RC773	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
195	RC775	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
196	RC778	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
197	RC779	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
198	RC782	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	

ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
199	RC824	HRFT333JBA	R CHIP	1/10 33K OHM J 1608	
200	RC827	HRFT511JBA	R CHIP	1/10 510 OHM J 1608	
201	RC830	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
202	RC832	HRFT752JBA	R CHIP	1/10 7.5K OHM J 1608	
203	RC835	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
204	RC873	HRFT391JBA	R CHIP	1/10 390 OHM J 1608	
205	RCA05	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
206	RCA06	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
207	RCV02	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
208	RCV03	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
209	RCV04	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
210	ZZ200	PTMPJ0K219	PCB MAIN (RHU) AS	DTH-21S7STF	
211	C402	CEXF2A101C	C ELECTRO	100V RUS 100MF 13*20 TP	
212	C404	CEXA2D229E	C ELECTRO	200V RUL 2.2MF (10X16) TP	
213	C409	CMXE2G333J	C MYLAR	400V PU 0.033MF J (TP)	
214	C411	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
215	C416	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)	
216	C417	CEXF1E331V	C ELECTRO	25V RSS 330MF (10X12.5)TP	
217	C419	CEXF1E331V	C ELECTRO	25V RSS 330MF (10X12.5)TP	
218	C613	CEXF1E102C	C ELECTRO	25V RUS 1000MF (13X20) TP	
219	C814	CCXB3D221K	C CERA	2KV B 220PF K (TAPPING)	
220	C817	CEXF2A470C	C ELECTRO	100V RUS 47MF (10X16) TP	
221	C820	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP	
222	C835	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP	
223	C852	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
224	L808	58CX430599	COIL CHOKE	AZ-9004Y 940K TP	
225	ZZ200	PTMPJBK219	PCB MAIN M-10 AS	DTH-21S7STF	
226	500	2TM18006BE	TAPE MASKING	6.2X500	
227	E001	4856310300	EYE LET	BSR T0.2 (R1.6)	
228	E002	4856310300	EYE LET	BSR T0.2 (R1.6)	
229	E003	4856310300	EYE LET	BSR T0.2 (R1.6)	
230	E004	4856310300	EYE LET	BSR T0.2 (R1.6)	
231	E006	4856310300	EYE LET	BSR T0.2 (R1.6)	
232	E007	4856310300	EYE LET	BSR T0.2 (R1.6)	
233	E008	4856310300	EYE LET	BSR T0.2 (R1.6)	
234	E009	4856310300	EYE LET	BSR T0.2 (R1.6)	
235	E010	4856310600	EYE LET	BSR T0.2 (R2.3)	
236	E011	4856310600	EYE LET	BSR T0.2 (R2.3)	
237	E012	4856310600	EYE LET	BSR T0.2 (R2.3)	
238	E013	4856310300	EYE LET	BSR T0.2 (R1.6)	
239	E014	4856310300	EYE LET	BSR T0.2 (R1.6)	
240	E015	4856310300	EYE LET	BSR T0.2 (R1.6)	
241	E016	4856310600	EYE LET	BSR T0.2 (R2.3)	
242	E017	4856310300	EYE LET	BSR T0.2 (R1.6)	

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
243	E018	4856310300	EYE LET	BSR T0.2 (R1.6)	
244	E019	4856310300	EYE LET	BSR T0.2 (R1.6)	
245	E020	4856310600	EYE LET	BSR T0.2 (R2.3)	
246	E021	4856310600	EYE LET	BSR T0.2 (R2.3)	
247	E022	4856310300	EYE LET	BSR T0.2 (R1.6)	
248	E023	4856310300	EYE LET	BSR T0.2 (R1.6)	
249	E024	4856310600	EYE LET	BSR T0.2 (R2.3)	
250	E025	4856310600	EYE LET	BSR T0.2 (R2.3)	
251	E026	4856310600	EYE LET	BSR T0.2 (R2.3)	
252	E027	4856310600	EYE LET	BSR T0.2 (R2.3)	
253	E028	4856310600	EYE LET	BSR T0.2 (R2.3)	
254	E029	4856310600	EYE LET	BSR T0.2 (R2.3)	
255	E030	4856310300	EYE LET	BSR T0.2 (R1.6)	
256	E031	4856310300	EYE LET	BSR T0.2 (R1.6)	
257	E032	4856310300	EYE LET	BSR T0.2 (R1.6)	
258	E033	4856310300	EYE LET	BSR T0.2 (R1.6)	
259	E034	4856310300	EYE LET	BSR T0.2 (R1.6)	
260	E036	4856310600	EYE LET	BSR T0.2 (R2.3)	
261	E037	4856310600	EYE LET	BSR T0.2 (R2.3)	
262	E040	4856310300	EYE LET	BSR T0.2 (R1.6)	
263	E041	4856310300	EYE LET	BSR T0.2 (R1.6)	
264	E042	4856310300	EYE LET	BSR T0.2 (R1.6)	
265	E043	4856310600	EYE LET	BSR T0.2 (R2.3)	
266	E044	4856310600	EYE LET	BSR T0.2 (R2.3)	
267	E045	4856310300	EYE LET	BSR T0.2 (R1.6)	
268	E046	4856310300	EYE LET	BSR T0.2 (R1.6)	
269	E047	4856310300	EYE LET	BSR T0.2 (R1.6)	
270	E048	4856310300	EYE LET	BSR T0.2 (R1.6)	
271	E049	4856310600	EYE LET	BSR T0.2 (R2.3)	
272	E050	4856310600	EYE LET	BSR T0.2 (R2.3)	
273	E051	4856310600	EYE LET	BSR T0.2 (R2.3)	
274	E052	4856310600	EYE LET	BSR T0.2 (R2.3)	
275	E053	4856310600	EYE LET	BSR T0.2 (R2.3)	
276	E056	4856310300	EYE LET	BSR T0.2 (R1.6)	
277	E057	4856310300	EYE LET	BSR T0.2 (R1.6)	
278	E058	4856310300	EYE LET	BSR T0.2 (R1.6)	
279	E059	4856310300	EYE LET	BSR T0.2 (R1.6)	
280	E060	4856310300	EYE LET	BSR T0.2 (R1.6)	
281	E061	4856310300	EYE LET	BSR T0.2 (R1.6)	
282	E062	4856310300	EYE LET	BSR T0.2 (R1.6)	
283	E065	4856310300	EYE LET	BSR T0.2 (R1.6)	
284	E066	4856310300	EYE LET	BSR T0.2 (R1.6)	
285	E067	4856310300	EYE LET	BSR T0.2 (R1.6)	
286	E068	4856310300	EYE LET	BSR T0.2 (R1.6)	

ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
287	E073	4856310300	EYE LET	BSR T0.2 (R1.6)	
288	N004	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)	
289	N005	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)	
290	N006	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)	
291	N007	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)	
292	N008	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)	
293	N009	4857417500	TERM PIN	DA-IB0214(D2.3/DY PIN)	
294	P601	485923172S	CONN WAFER	YW025-04 (STICK)	
295	P705	485923172S	CONN WAFER	YW025-04 (STICK)	
296	PK01B	485923162S	CONN WAFER	YW025-03 (STICK)	
297	R106	RS02Z472JS	R M-OXIDE FILM	2W 4.7K OHM J SMALL	
298	R401	RS02Z100JS	R M-OXIDE FILM	2W 10 OHM J SMALL	
299	R407	RS02Z163JS	R M-OXIDE FILM	2W 16K OHM J SMALL	
300	R414	RS02Z249JS	R M-OXIDE FILM	2W 2.4 OHM J SMALL	
301	R416	RF01Z338K-	R FUSIBLE	1W 0.33 OHM K (TAPPING)	
302	R417	RF01Z338K-	R FUSIBLE	1W 0.33 OHM K (TAPPING)	
303	R431	RS02Z100JS	R M-OXIDE FILM	2W 10 OHM J SMALL	
304	R802	RS02Z913JS	R M-OXIDE FILM	2W 91K OHM J SMALL	
305	R829	RS02Z229JS	R M-OXIDE FILM	2W 2.2 OHM J SMALL	
306	R836	RS02Z109JS	R M-OXIDE FILM	2W 1 OHM J SMALL	
307	R837	RS02Z228JS	R M-OXIDE FILM	2W 0.22 OHM J SMALL	
308	R920	RS02Z189JS	R M-OXIDE FILM	2W 1.8 0HM J SMALL	
309	ZZ200	PTMPJRK219	PCB MAIN RADIAL AS	DTH-21S7STF	
310	C101	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
311	C102	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
312	C104	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP	
313	C106	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
314	C112	CMXM2A682J	C MYLAR	100V 6800PF J (TP)	
315	C114	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
316	C115	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)	
317	C117	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
318	C118	CMXL1J154J	C MYLAR	63V MEU 0.15MF J	
319	C124	CMXM2A473J	C MYLAR	100V 0.047MF J (TP)	
320	C125	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
321	C128	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
322	C130	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
323	C201	CMXL1J103J	C MYLAR	63V MEU 0.01MF J	
324	C202	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
325	C204	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
326	C206	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
327	C302	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP	
328	C303	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
329	C307	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
330	C312	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
331	C403	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)	
332	C405	CCXB2H561K	C CERA	500V B 560PF K (TAPPING)	
333	C410	CXSL2H470J	C CERA	500V SL 47PF J (TAPPING)	
334	C413	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
335	C422	CMXM2A473J	C MYLAR	100V 0.047MF J (TP)	
336	C423	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
337	C430	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
338	C462	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
339	C601	CEXF1E470C	C ELECTRO	25V RUS 47MF (5X11) TP	
340	C602	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)	
341	C603	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)	
342	C604	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
343	C605	CMXM2A682J	C MYLAR	100V 6800PF J (TP)	
344	C606	CMXM2A682J	C MYLAR	100V 6800PF J (TP)	
345	C607	CCXF1H104Z	C CERA	50V F 0.1MF Z	
346	C608	CCXF1H104Z	C CERA	50V F 0.1MF Z	
347	C609	CCXF1H104Z	C CERA	50V F 0.1MF Z	
348	C610	CCXF1H104Z	C CERA	50V F 0.1MF Z	
349	C614	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
350	C622	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
351	C623	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
352	C624	CMXL1J104J	C MYLAR	63V MEU 0.1MF J	
353	C625	CMXL1J104J	C MYLAR	63V MEU 0.1MF J	
354	C626	CMXL1J104J	C MYLAR	63V MEU 0.1MF J	
355	C627	CMXL1J104J	C MYLAR	63V MEU 0.1MF J	
356	C628	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
357	C629	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
358	C701	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
359	C704	CEXF1E470V	C ELECTRO	RSS 25V 47MF 5X11 P5.0 TA	
360	C707	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
361	C713	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
362	C716	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
363	C721	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
364	C722	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)	
365	C723	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
366	C727	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
367	C729	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
368	C730	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
369	C731	CEXF1E470V	C ELECTRO	RSS 25V 47MF 5X11 P5.0 TA	
370	C734	CMXL1J224J	C MYLAR	63V MEU 0.22MF J (TP)	
371	C735	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
372	C740	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
373	C804	CCXF3A472Z	C CERA	1KV F 4700PF Z (T)	
374	C805	CCXF3A472Z	C CERA	1KV F 4700PF Z (T)	

ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
375	C809	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
376	C810	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
377	C811	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
378	C812	CCXB1H821K	C CERA	50V B 820PF K (TAPPING)	
379	C821	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
380	C824	CMXL1J154J	C MYLAR	63V MEU 0.15MF J	
381	C826	CEXF1E221V	C ELECTRO	25V RSS 220MF (8X11.5) TP	
382	C827	CEXF1C331V	C ELECTRO	16V RSS 330MF (8X11.5) TP	
383	C828	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
384	C829	CMXL2E104K	C MYLAR	250V MEU 0.1MF K	
385	C836	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP	
386	C837	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
387	C842	CCXB3A471K	C CERA	1KV B 470PF K (T)	
388	C904	CCXB3A271K	C CERA	1KV B 270PF K (TAPPING)	
389	CS03	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
390	CS05	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
391	F801	5FWPS4022L	FUSE	WIDE TL 250V 4A CASE	
392	I804	1K1A431B--	IC REGULATOR(SHUNT)	KIA431B 2.495V 0.5% TO-92	
393	L901	5CPX181J--	COIL PEAKING	180UH J (RADIAL)	
394	Q101	TKTC3198Y-	TR	KTC3198Y	
395	Q201	TKTA1266Y-	TR	KTA1266Y (TP)	
396	Q404	T2SA1980Y-	TR	2SA1980(N)Y	
397	Q405	T2SA1980Y-	TR	2SA1980(N)Y	
398	Q602	TKTA1266Y-	TR	KTA1266Y (TP)	
399	Q704	TKTC3198Y-	TR	KTC3198Y	
400	Q705	TKTA1270Y-	TR	KTA1270Y (TP)	
401	Q706	TKTC3198Y-	TR	KTC3198Y	
402	Q707	TKTA1270Y-	TR	KTA1270Y (TP)	
403	Q708	TKTC3198Y-	TR	KTC3198Y	
404	Q801	TKTC3203Y-	TR	KTC3203-Y	
405	Q804	TKTC3198Y-	TR	KTC3198Y	
406	Q805	TKTC3198Y-	TR	KTC3198Y	
407	Q904	TBF420----	TR	BF420	
408	Q905	TBF420----	TR	BF420	
409	Q906	TBF420----	TR	BF420	
410	Q907	TBF421----	TR	BF421	
411	Q908	TBF421----	TR	BF421	
412	Q909	TBF421----	TR	BF421	
413	R302	RN02B271JS	R METAL FILM	2W 270 OHM J SMALL	
414	R305	RN02B109JS	R METAL FILM	2W 1 OHM J SMALL	
415	R402	RN02B201JS	R METAL FILM	2W 200 OHM J SMALL	
416	R403	RN01B472JS	R METAL FILM	1W 4.7K OHM J SMALL	
417	R408	RN02B102JS	R METAL FILM	2W 1K OHM J SMALL	
418	R411	RN02B109JS	R METAL FILM	2W 1 OHM J SMALL	

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
419	R904	RN02B153JS	R METAL FILM	2W 15K OHM J SMALL	
420	R905	RN02B153JS	R METAL FILM	2W 15K OHM J SMALL	
421	R906	RN02B153JS	R METAL FILM	2W 15K OHM J SMALL	
422	RS04	RN01B221JS	R METAL FILM	1W 220 OHM J SMALL	
423	RS05	RN01B221JS	R METAL FILM	1W 220 OHM J SMALL	
424	SW01	5S50101Z90	SW TACT	THVV502GDA	
425	SW02	5S50101Z90	SW TACT	THVV502GDA	
426	SW03	5S50101Z90	SW TACT	THVV502GDA	
427	SW04	5S50101Z90	SW TACT	THVV502GDA	
428	SW05	5S50101Z90	SW TACT	THVV502GDA	
429	SW06	5S50101Z90	SW TACT	THVV502GDA	
430	ZZ200	PTMPJAK219	PCB MAIN AXIAL AS	DTH-21S7STF	
431	510	2TM14006LB	TAPE MASKING	3M #232 6.0X2000M	
432	520	2TM10006LB	TAPE MASKING	3M #232-MAP-C 6.2X2000M	
433	A001	4859819192	PCB MAIN	330X246 D1B	
434	C110	CCZL1H222K	C CERA	50V B 2200PF K AXL(1608)	
435	C116	CCZJ1H223Z	C CERA	50V F 0.022MF Z AXL(1608)	
436	C203	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
437	C205	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
438	C719	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
439	C732	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
440	C733	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
441	C737	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
442	C813	CCZB1H471K	C CERA	50V B 470PF K (AXIAL)	
443	C901	CCZB1H331K	C CERA	50V B 330PF K (AXIAL)	
444	C902	CCZB1H331K	C CERA	50V B 330PF K (AXIAL)	
445	C903	CCZB1H331K	C CERA	50V B 330PF K (AXIAL)	
446	CA04	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
447	CS01	CCZL1H222K	C CERA	50V B 2200PF K AXL(1608)	
448	CS02	CCZL1H222K	C CERA	50V B 2200PF K AXL(1608)	
449	CS04	CCZL1H222K	C CERA	50V B 2200PF K AXL(1608)	
450	CS06	CCZL1H222K	C CERA	50V B 2200PF K AXL(1608)	
451	CV13	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
452	CV14	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
453	CV15	CCZJ1H104Z	C CERA	50V F 0.1MF Z AXL(1608)	
454	D101	DUZ33B----	DIODE ZENER	UZ-33B	
455	D301	D1N4004S--	DIODE	1N4004S	
456	D401	D1N4937G--	DIODE	1N4937G (TAPPING)	
457	D404	DUZ9R1BM--	DIODE ZENER	UZ-9.1BM	
458	D405	D1N4937G--	DIODE	1N4937G (TAPPING)	
459	D406	D1N4937G--	DIODE	1N4937G (TAPPING)	
460	D407	DRGP15JP--	DIODE	RGP-15JP	
461	D408	DRGP15JP--	DIODE	RGP-15JP	
462	D430	DUZ12BM---	DIODE ZENER	UZ-12BM (UNIZON)	

ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
463	D602	D1N4148---	DIODE	1N4148 (TAPPING)	
464	D701	DUZ3R9B---	DIODE ZENER	UZ-3.9B	
465	D702	D1N4148---	DIODE	1N4148 (TAPPING)	
466	D703	D1N4148---	DIODE	1N4148 (TAPPING)	
467	D706	DUZ3R3B---	DIODE ZENER	UZ-3.3B	
468	D707	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM	
469	D708	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM	
470	D709	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM	
471	D801	DLT2A05G--	DIODE	LT2A05G (TP)	
472	D802	DLT2A05G--	DIODE	LT2A05G (TP)	
473	D803	DLT2A05G--	DIODE	LT2A05G (TP)	
474	D804	DLT2A05G--	DIODE	LT2A05G (TP)	
475	D805	D1N4937G--	DIODE	1N4937G (TAPPING)	
476	D806	D1N4937G--	DIODE	1N4937G (TAPPING)	
477	D807	D1N4148---	DIODE	1N4148 (TAPPING)	
478	D808	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM	
479	D810	D1N4937G--	DIODE	1N4937G (TAPPING)	
480	D814	DUZ5R1B---	DIODE ZENER	UZ-5.1B	
481	D815	D1N4148---	DIODE	1N4148 (TAPPING)	
482	D902	D1N4148---	DIODE	1N4148 (TAPPING)	
483	DS01	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM	
484	J001	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
485	J002	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
486	J003	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
487	J004	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
488	J006	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
489	J007	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
490	J008	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
491	J011	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
492	J012	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
493	J013	5MC0000100	COIL BEAD	HC-3550	
494	J014	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
495	J017	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
496	J021	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
497	J024	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
498	J025	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
499	J026	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
500	J027	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
501	J028	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
502	J029	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
503	J031	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
504	J032	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
505	J033	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
506	J034	85801050GY	WIRE COPPER	1/0.5 TIN COATING	

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
507	J037	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
508	J040	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
509	J041	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
510	J042	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
511	J043	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
512	J044	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
513	J045	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
514	J046	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
515	J047	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
516	J048	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
517	J049	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
518	J050	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
519	J051	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
520	J052	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
521	J053	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
522	J056	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
523	J060	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
524	J061	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
525	J062	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
526	J063	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
527	J064	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
528	J065	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
529	J067	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
530	J069	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
531	J070	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
532	J071	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
533	J072	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
534	J073	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
535	J074	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
536	J075	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
537	J076	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
538	J077	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
539	J082	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
540	J083	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
541	J084	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
542	J087	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
543	J088	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
544	J089	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
545	J091	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
546	J092	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
547	J097	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
548	J098	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
549	J124	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
550	J125	85801050GY	WIRE COPPER	1/0.5 TIN COATING	

ELECTRICAL PARTS LIST

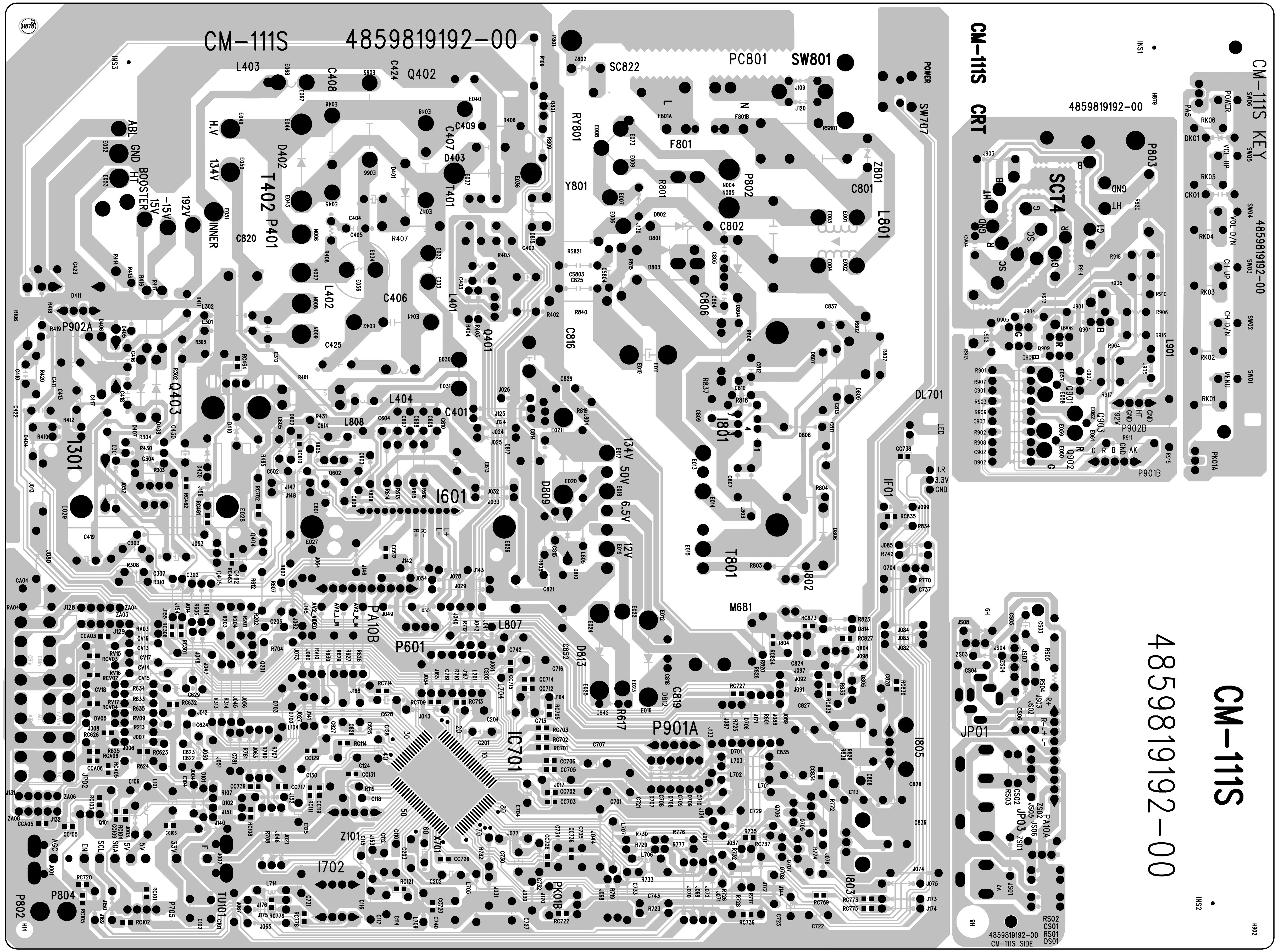
NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
551	J128	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
552	J129	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
553	J131	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
554	J132	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
555	J133	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
556	J134	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
557	J140	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
558	J141	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
559	J142	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
560	J143	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
561	J145	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
562	J146	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
563	J147	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
564	J148	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
565	J150	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
566	J151	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
567	J152	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
568	J153	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
569	J154	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
570	J155	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
571	J156	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
572	J164	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
573	J165	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
574	J167	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
575	J168	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
576	J169	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
577	J170	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
578	J171	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
579	J172	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
580	J173	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
581	J174	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
582	J175	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
583	J176	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
584	J901	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
585	J903	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
586	J904	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
587	JS01	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
588	JS02	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
589	JS03	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
590	JS04	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
591	JS05	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
592	JS06	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
593	JS07	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
594	JS08	85801050GY	WIRE COPPER	1/0.5 TIN COATING	

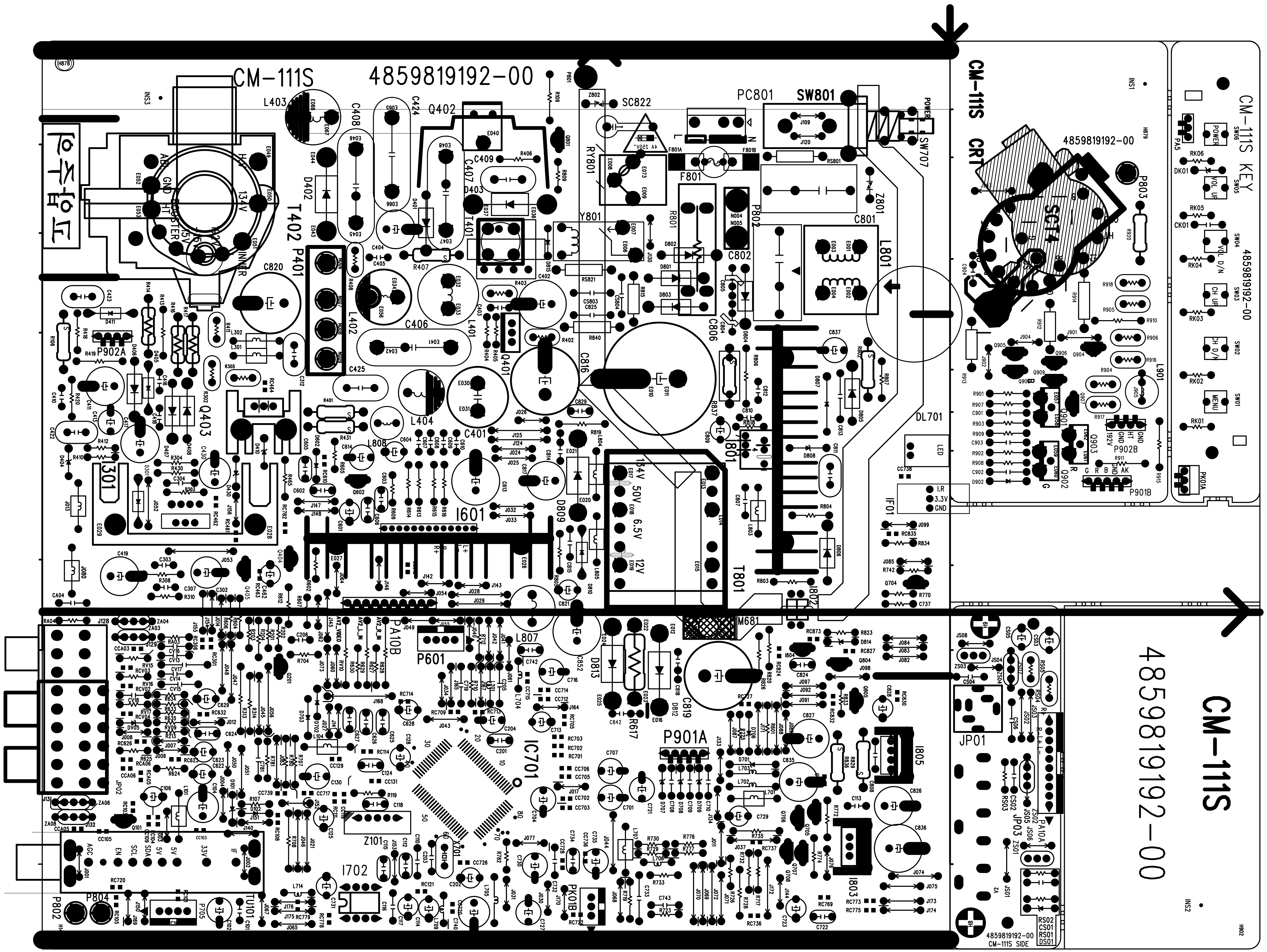
NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
595	L101	5CPZ470K04	COIL PEAKING	47UH 10.5MM K (LAL04TB)	
596	L104	5CPZ479K04	COIL PEAKING	4.7UH K (AXIAL 10.5MM)	
597	L201	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
598	L301	5MC0000100	COIL BEAD	HC-3550	
599	L302	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
600	L701	5CPZ479K04	COIL PEAKING	4.7UH K (AXIAL 10.5MM)	
601	L702	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
602	L703	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
603	L704	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
604	L705	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
605	L706	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
606	L707	5CPZ479K04	COIL PEAKING	4.7UH K (AXIAL 10.5MM)	
607	L709	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
608	L714	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
609	L803	5MC0000100	COIL BEAD	HC-3550	
610	L804	5MC0000100	COIL BEAD	HC-3550	
611	L805	5MC0000100	COIL BEAD	HC-3550	
612	R107	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
613	R109	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
614	R119	RN-AZ3902F	R METAL FILM	1/6 39K OHM F	
615	R201	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
616	R203	RN-AZ1801F	R METAL FILM	1/6 1.8K OHM F	
617	R204	RD-4Z332J-	R CARBON FILM	1/4 3.3K OHM J	
618	R213	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
619	R303	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
620	R304	RN-4Z2401F	R METAL FILM	1/4 2.40K OHM F	
621	R308	RN-4Z2401F	R METAL FILM	1/4 2.40K OHM F	
622	R310	RD-AZ334J-	R CARBON FILM	1/6 330K OHM J	
623	R313	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
624	R314	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
625	R404	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
626	R405	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
627	R406	RD-4Z220J-	R CARBON FILM	1/4 22 OHM J	
628	R410	RN-AZ9101F	R METAL FILM	1/6 9.1K OHM F	
629	R412	RN-AZ1302F	R METAL FILM	1/6 13K OHM F	
630	R413	RD-4Z470J-	R CARBON FILM	1/4 47 OHM J	
631	R418	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
632	R419	RD-4Z333J-	R CARBON FILM	1/4 33K OHM J	
633	R420	RD-4Z123J-	R CARBON FILM	1/4 12K OHM J	
634	R430	RD-4Z331J-	R CARBON FILM	1/4 330 OHM J	
635	R465	RD-4Z753J-	R CARBON FILM	1/4 75K OHM J	
636	R601	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
637	R602	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
638	R604	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	

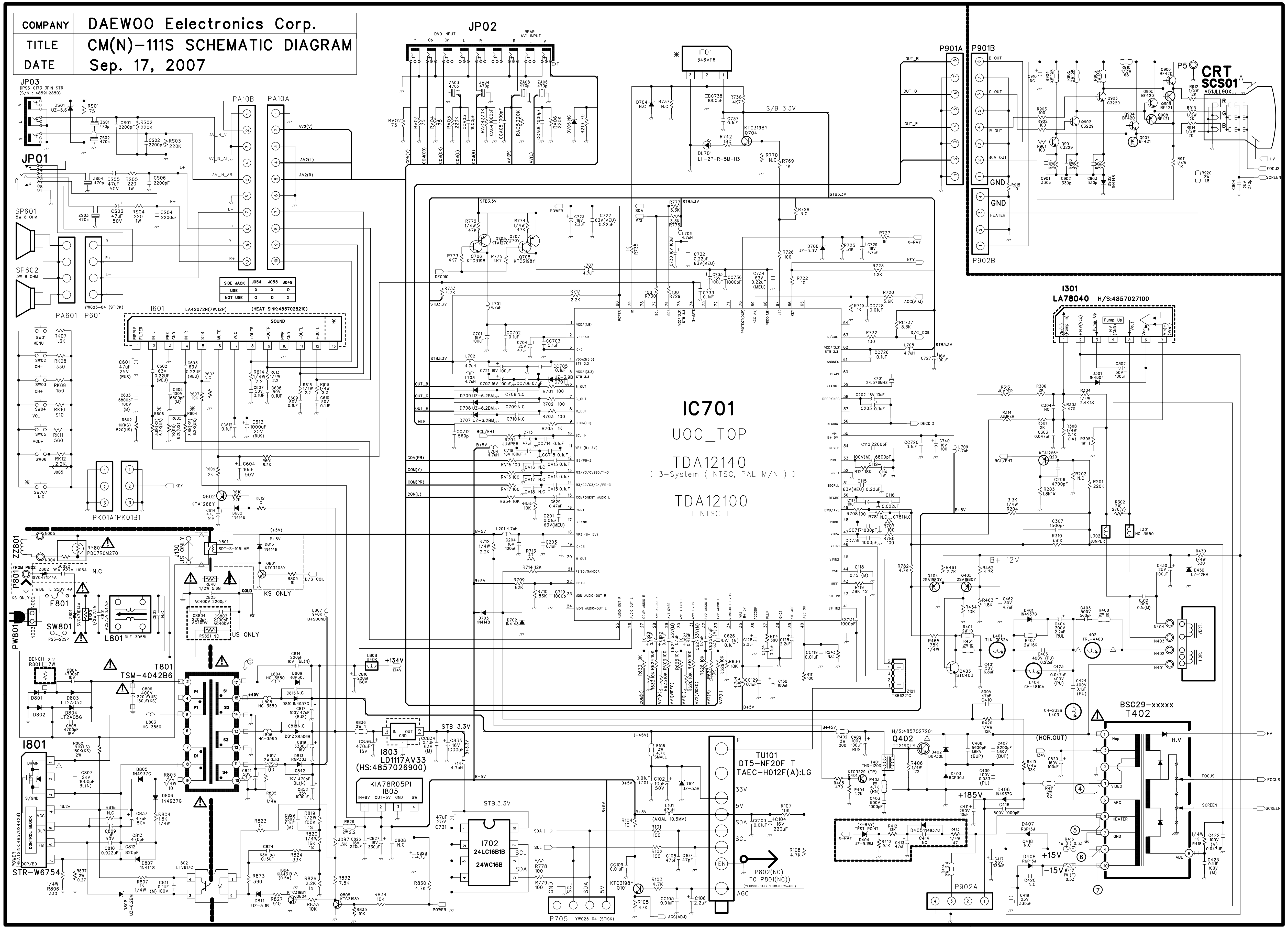
ELECTRICAL PARTS LIST

NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
639	R605	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
640	R606	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
641	R607	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
642	R609	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
643	R612	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
644	R613	RD-4Z229J-	R CARBON FILM	1/4 2.2 OHM J	
645	R614	RD-4Z229J-	R CARBON FILM	1/4 2.2 OHM J	
646	R615	RD-4Z229J-	R CARBON FILM	1/4 2.2 OHM J	
647	R616	RD-4Z229J-	R CARBON FILM	1/4 2.2 OHM J	
648	R624	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
649	R625	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
650	R627	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
651	R628	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
652	R629	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
653	R630	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
654	R633	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
655	R634	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
656	R635	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
657	R704	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
658	R707	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
659	R708	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
660	R710	RD-AZ563J-	R CARBON FILM	1/6 56K OHM J	
661	R712	RD-4Z222J-	R CARBON FILM	1/4 2.2K OHM J	
662	R717	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
663	R719	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
664	R723	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
665	R725	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J	
666	R726	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
667	R729	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
668	R730	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
669	R732	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
670	R733	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
671	R735	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
672	R742	RD-AZ181J-	R CARBON FILM	1/6 180 OHM J	
673	R772	RD-4Z473J-	R CARBON FILM	1/4 47K OHM J	
674	R774	RD-4Z473J-	R CARBON FILM	1/4 47K OHM J	
675	R776	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
676	R777	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
677	R780	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
678	R782	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
679	R803	RD-4Z100J-	R CARBON FILM	1/4 10 OHM J	
680	R804	RD-4Z152J-	R CARBON FILM	1/4 1.5K OHM J	
681	R805	RD-4Z100J-	R CARBON FILM	1/4 10 OHM J	
682	R806	RD-4Z331J-	R CARBON FILM	1/4 330 OHM J	

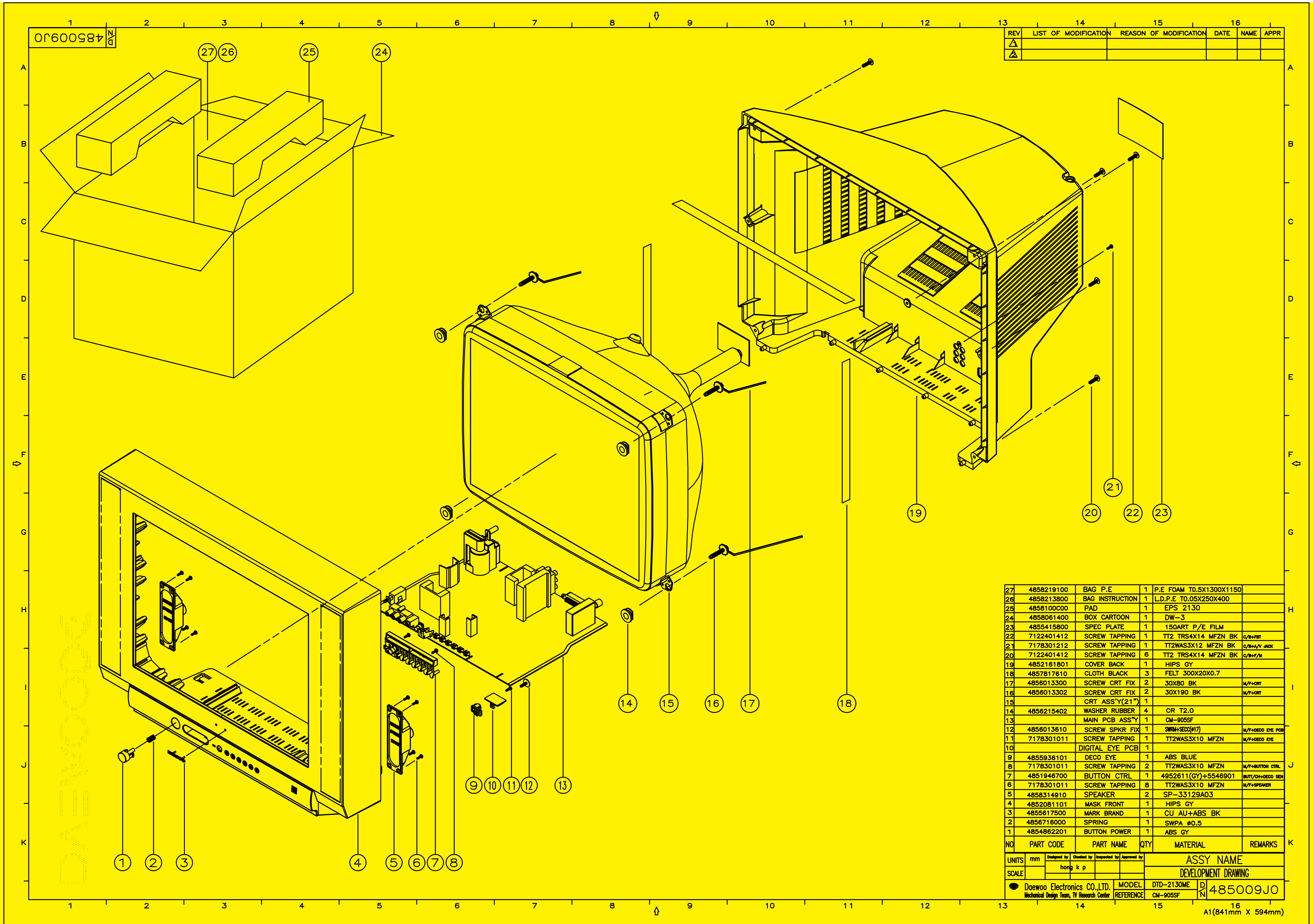
NO	LOC	PARTS CODE	PARTS NAME	PART DESCRIPTION	REMARK
683	R807	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
684	R809	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
685	R819	RN-2Z1003F	R METAL FILM	1/2 100K OHM F	
686	R820	RN-4Z1602F	R METAL FILM	1/4 16.0K OHM F	
687	R823	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
688	R826	RN-AZ2201F	R METAL FILM	1/6 2.2K OHM F	
689	R833	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
690	R834	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
691	R840	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K	
692	R901	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
693	R902	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
694	R903	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
695	R907	RD-AZ301J-	R CARBON FILM	1/6 300 OHM J	
696	R908	RD-AZ301J-	R CARBON FILM	1/6 300 OHM J	
697	R909	RD-AZ301J-	R CARBON FILM	1/6 300 OHM J	
698	R910	RD-2Z680J-	R CARBON FILM	1/2 68 OHM J	
699	R911	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
700	R912	RD-2Z202J-	R CARBON FILM	1/2 2K OHM J	
701	R913	RD-2Z202J-	R CARBON FILM	1/2 2K OHM J	
702	R914	RD-2Z202J-	R CARBON FILM	1/2 2K OHM J	
703	R915	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
704	RA03	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
705	RA04	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
706	RK01	RD-AZ132J-	R CARBON FILM	1/6 1.3K OHM J	
707	RK02	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
708	RK03	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
709	RK04	RD-AZ911J-	R CARBON FILM	1/6 910 OHM J	
710	RK05	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
711	RK06	85801050GY	WIRE COPPER	1/0.5 TIN COATING	
712	RS01	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
713	RS02	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
714	RS03	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
715	RS801	RC-2Z225KP	R CARBON COMP	1/2 2.2M OHM K	
716	RV09	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
717	RV10	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
718	RV15	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
719	RV16	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
720	RV17	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	




CM-111S
4859819192-00
CM-111S CRT
CM-111S KEY
4859819192-00
CM-111S
4859819192-00
4859819192-00
CM-111S SIDE


COMPANY
DAEWOO Eelectronics Corp.
TITLE
CM(N)-111S SCHEMATIC DIAGRAM
DATE
Sep. 17, 2007
IC701
UOC_TOP
TDA12140
[3-System (NTSC, PAL M/N)]
TDA12100
[NTSC]
CRT
SCS01
I301
LA78040
BSC29-xxxxx
T402
T801
TSM-4042B6
I801
STR-W6754
I803
LD1117AV33
KIA78R05PI
I805
I702
24LC16B1B
24WC16B
TU101
DT5-NF20F T
TAEC-H012F(A):LG
I601
LA42072N(7W,12P)
Q402
JP02
JP03
JP01
SP601
SP602
P901A
P901B
P902B
P902A
P705
PW801
SW801
F801
L801
US ONLY
KS ONLY

EXPLODE VIEW



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
27	4858219100	BAG P.E	1	P.E FOAM T0.5X1300X1150	
26	4858213800	BAG INSTRUCTION	1	L.D.P.E T0.05X250X400	
25	4858100C00	PAD	1	EPS 2130	
24	4858061400	BOX CARTOON	1	DW-3	
23	4855415800	SPEC PLATE	1	150ART P/E FILM	
22	7122401412	SCREW TAPPING	1	TT2 TRS4X14 MFZN BK	C/B+FBT
21	7178301212	SCREW TAPPING	1	TT2WAS3X12 MFZN BK	C/B+A/V JACK
20	7122401412	SCREW TAPPING	6	TT2 TRS4X14 MFZN BK	C/B+F/M
19	4852161801	COVER BACK	1	HIPS GY	
18	4857817610	CLOTH BLACK	3	FELT 300X20X0.7	
17	4856013300	SCREW CRT FIX	2	30X80 BK	M/F+CRT
16	4856013302	SCREW CRT FIX	2	30X190 BK	M/F+CRT
15		CRT ASS'Y(21")	1		
14	4856215402	WASHER RUBBER	4	CR T2.0	
13		MAIN PCB ASS"Y	1	CM-905SF	
12	4856013610	SCREW SPKR FIX	1	SWRM+SECC(ø17)	M/F+DECO EYE PCB
11	7178301011	SCREW TAPPING	1	TT2WAS3X10 MFZN	M/F+DECO EYE
10		DIGITAL EYE PCB	1		
9	4855936101	DECO EYE	1	ABS BLUE	
8	7178301011	SCREW TAPPING	2	TT2WAS3X10 MFZN	M/F+BUTTON CTRL
7	4851946700	BUTTON CTRL	1	4952611(GY)+5546901	BUTT/CH+DECO SEN
6	7178301011	SCREW TAPPING	8	TT2WAS3X10 MFZN	M/F+SPEAKER
5	4858314910	SPEAKER	2	SP-33129A03	
4	4852081101	MASK FRONT	1	HIPS GY	
3	4855617500	MARK BRAND	1	CU AU+ABS BK	
2	4856716000	SPRING	1	SWPA ø0.5	
1	4854862201	BUTTON POWER	1	ABS GY	

UNITS	mm	Designed by	Checked by	Inspected by	Approved by	ASSY NAME
SCALE		hong k p				DEVELOPMENT DRAWING

Daewoo Electronics CO.,LTD. Mechanical Design Team, TV Research Center	MODEL	DTD-2130ME	D/N	485009J0
	REFERENCE	CM-905SF		

A1(841mm X 594mm)

DAEWOO ELECTRONICS CORP.
686, AHYEON-DONG, MAPO-GU,
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